


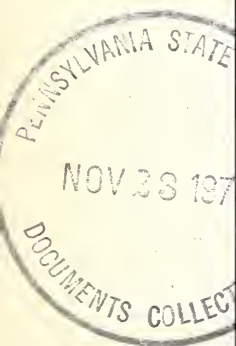
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INTERNATIONAL MARKETING INFORMATION SERVICE 

COUNTRY MARKET SURVEY

VENEZUELA



U.S.
DEPARTMENT
OF
COMMERCE
Bureau
of
International
Commerce





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Venezuela

INTERNATIONAL MARKETING INFORMATION SERVICE

U.S. DEPARTMENT OF COMMERCE

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November 1969



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FOREWORD

Venezuela, with its high gross national product, sound economy, stable Government, and orientation toward U.S. suppliers, must be regarded as one of the best U.S. overseas markets. Among Latin American countries, in 1968, Venezuela ranked second as a purchaser of U.S. goods, with imports of \$780 million, and ranked third in total imports, which amounted to \$1.55 billion. On a worldwide basis, Venezuela was America's ninth leading customer.

Other major supplier nations are showing keen interest in competing for this attractive market. Maintenance of the U.S. position requires that U.S. exporters make a strong initial sales effort, offer competitive prices and terms, and provide continued attention to customers once sales have been made. This study is intended to help U.S. businessmen meet the competitive challenge.

For the preparation of this publication the Department was fortunate in being able to enlist the services of Hans J. Mueller, a longtime employee of the U.S. Embassy in Caracas. Mr. Mueller, a native of Germany, has acquired an impressive knowledge of the Venezuelan economy which is reflected in this study.

November 1969

Harold B. Scott

Director, Bureau of International Commerce

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The Market Setting

THE COMPOSITE MARKET

Venezuela represents an excellent market for U. S. exports. Its Gross National Product (GNP) of approximately \$9.3 billion in 1968 was the fourth highest in Latin America, trailing only the much larger nations of Brazil, Mexico, and Argentina. Its per capita income of approximately \$800 was the highest in Latin America. In worldwide import trade, Venezuela ranks with Brazil, Mexico, and Argentina as the area's predominant importers, and has been the second or third best U. S. customer in Latin America for several years.

The rapidly expanding Venezuelan manufacturing sector constitutes both a market for U. S. materials and equipment, and an important competitor for sales of a widening range of goods in the local market. This publication attempts, within the limits of available information, to provide a comprehensive view of the Venezuelan manufacturing sector: its output, equipment, import requirements, and plans. Thus the publication is intended to assist U. S. exporters, and investors as well, in planning their activities in the Venezuelan market.

During the period 1963-68, manufacturing output, in real terms, grew at an annual rate of over 7%, and investment in manufacturing grew at an annual rate of nearly 10%. Imports of non-consumer goods, by volume, grew at an annual rate of approximately 12%.

The manufacturing section, including petroleum refining, contributed 14.9% of Venezuela's 1968 Gross Domestic Product (GDP) of about 33.2 billion bolivares (in 1957 prices).¹ (The GDP in current prices was about 44.7 billion bolivares, or approximately \$9.9 billion.) The other sectors of the economy made the following contributions to the 1968 GDP:

agriculture	6.2%
commerce	16.0%
construction	5.3%
mining	1.1%
petroleum (excluding refining)	24.2%
services	25.0%
transport and communications	3.7%
water and electric power	2.7%

¹ One bolivar = approximately \$0.30 at the 1957 rate of exchange, or \$0.22 at the rate of exchange prevailing since early 1964.



Venezuela's rich reserves of mineral resources include diamonds. These men are working the Guaiparo Mines.

(See *Basic Data on the Economy of Venezuela*, OBR 67-2, for further detail on output by sector.)

The period of the most rapid growth of the manufacturing industry appears to be over, as import substitution of most consumer goods and the more simple intermediate goods has almost been achieved, and industry now has to enter into operations requiring a far greater investment and higher technology. However, annual growth is still impressive.

The final value of manufacturing output during recent years, at current prices, is shown in table 1. In 1968, the types of goods having the largest final value were petroleum derivatives and foods. These grew quite slowly during the period, reflecting a relative exhaustion of expansion possibilities in world and national markets. The next two types by size, vehicles and chemicals, grew rather quickly, as did basic metal products and graphic arts products. All these should continue their strong growth.

As may be seen in table 2, both gross fixed investment and existing capital are substantially larger for the category encompassing metal products, machinery and transport equipment, and for the foods category, than for the others. (Petroleum derivatives are excluded from the table.) As could be expected from the slow growth of food products manufacturing which was referred to previously, the rate of investment in this category has failed to increase. In general, investment over the period in manufacturing is concentrated in the 1967-68 interval. The 1966-67 interval was largely one of slowdown from the peak investment levels of the 1965-66 period.

The development of the manufacturing industry has profoundly altered Venezuela's trade pattern with the United States. Imports of consumer goods have been replaced to a large degree by imports of capital goods and raw materials. To many U. S. manufacturers this has meant that their finished products are no longer exportable to Venezuela, but that opportunities for exporting components or semi-finished products are increasing. U. S. equipment manufacturers find a better market in Venezuela than before. Many U. S. manufacturers, in order to remain in the market, have found it necessary to establish operations in Venezuela. The number of fully or partially-owned U. S. companies producing in Venezuela has increased to about 200, not counting locally-owned licensees. Due to the relatively small market, import substitution by domestic manufactures frequently results in higher cost, but there is widespread support for the policy.

Raw materials, equipment and finished manufactures which are imported by Venezuela in high volume are

shown in table 3. Road motor vehicles and parts provide the largest commodity grouping by far. Other large groupings include wheat; iron and steel; and conveying, hoisting, construction, and mining machinery and parts. Among the fastest growing during the period were organic chemicals, office machines, and aircraft.

The leading U. S. exports to Venezuela in 1969 were road motor vehicles and parts, wheat, pumps and compressors, iron and steel, heating and cooling machinery and equipment, and aircraft (see table 4). The strongest growth in recent years has been experienced by iron and steel, heating and cooling machinery and equipment, and aircraft.

THE ROLE OF THE GOVERNMENT

The manufacturing industry is one of the most dynamic sectors of the Venezuelan economy. Its expansion can be attributed partly to the deliberate Venezuelan policy of encouraging industrial development in order to lessen the nation's dependence upon petroleum. The rapid population growth of 3.4% per year requires many additional employment opportunities which are provided by a developing manufacturing industry.

The Government has pursued this goal by direct public investment in the infrastructure and in a number of basic industries, and by encouraging private investment. Venezuela contends that, although public investment plays an important role, private investment may be the primary developer in the manufacturing sector, especially in the lighter industries. In line with this thinking, foreign investment is welcomed and is accorded the same treatment as domestic capital, with few exceptions.

Government encouragement is carried out mainly by the Corporacion Venezolana de Fomento—CVF (Venezuelan Development Corporation), a semi-autonomous development institute which engages in a variety of activities to stimulate and assist in industrial development. This organization provides market and technical studies, management assistance, and financial aid in the form of equity investments, short and long-term loans, and leasing arrangements of complete plants with purchase option. The organization attempts to channel investment into certain sectors by giving priority treatment to certain manufacturing industries whose development it deems most important at a given

time. During 1968, CVF provided \$110 million in direct financial assistance to industries, and \$47 million in the form of guarantees for financing from other sources. Manufacturing is also encouraged by import policies that protect domestic production by restricting the imports of competing products, but which permits the almost unlimited entry at nominal or exonerated duties of capital goods or primary materials destined for manufacturing operations. In addition, the nation stimulates investment in manufacturing through other means, such as favorable tax and corporate structure laws.

GEOGRAPHY AND INFRASTRUCTURE

Venezuela is a Federal Republic consisting of 20 States, 2 Federal Territories, and 72 islands which are considered Federal Dependencies. It covers 352,141 square miles (approximately one third larger than Texas), and its population has passed the 10 million mark.

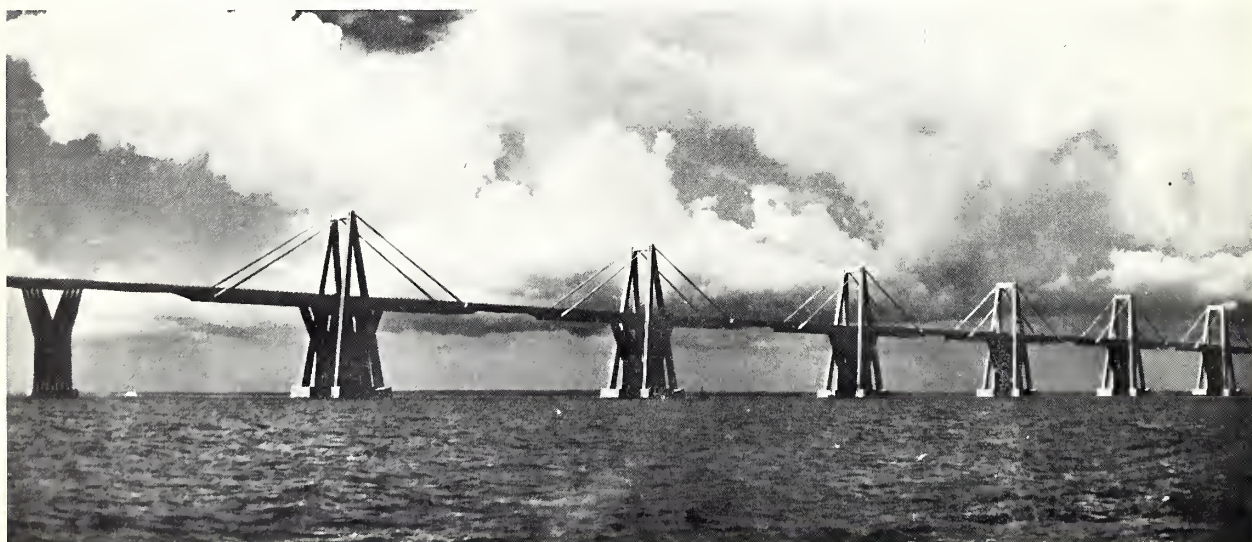
Venezuela's manufacturing industry is concentrated along a belt roughly parallel to the northern coast. The principal areas are those around Caracas and the Aragua-Carabobo area including Tejerias, La Victoria, Maracay, and Valencia. A further concentration around Lake Maracaibo is evident. A more recent development of industry is observed at Barcelona, Barquisimeto, Guarenas, the Tuy Valley, and Baruta, which is not far from Caracas. Some heavy industry is located in the new city of Ciudad Guayana, formed

from the three individual towns of Puerto Ordaz, San Felix, and Matanzas. (See Appendix for distribution, by type and location, of manufacturing.)

While industry in Caracas and around Maracaibo is concentrated in sectors set aside for this purpose within the cities, with light industry frequently in rented or converted premises in the middle of the cities, other towns have invested heavily in the development of industrial parks. These areas, usually provided with streets, water, lighting, power, and sewers, have found excellent acceptance. Valencia has been especially successful, and its industrial parks have close to 100 manufacturing industries. Several municipalities offer this type of development at very attractive prices and terms and, in addition, give special tax benefits.

Electric power is available throughout the country at 100/200 V, 60 cycles, and is supplied by the Government utility CADAPE and by private power companies. Natural gas is piped into most industrial areas. Water supply is adequate in all industrial areas but industries which depend on a reliable water supply frequently have constructed their own water towers.

All industrial and population centers are connected by an excellent highway network. While scheduled and unscheduled air freight service is available, by far the greatest percentage of all inland freight is transported by trucks. The only commercial railroad in operation is that from Puerto Cabello to Barquisimeto. Trucking service is available from large companies and from numerous small operators, and the equipment in existence is capable of transporting any type or weight of goods.



All major population and industrial centers are connected by highways. Bridge above spans Lake Maracaibo.

Food and Related Products

MEAT PACKING AND STORAGE

Cattle raising has been a major economic activity in Venezuela since early colonial times, and was at one time an important source of export earnings. However, because of many handicaps, meat production did not keep up with the growing demands of the country. Among the factors contributing to the decline of meat production and the consequent high imports of fresh meat and meat products until recent years were: a shortage of high grade breeding cattle with resistance to the tropical climate and the pests of the lowlands; inadequate water supply and pasture during the long dry seasons; prevalence of hoof-and-mouth disease; and inadequate storage, processing and transportation facilities. This picture has changed considerably. Excellent progress has been made in upgrading local cattle by breeding them with imported Cebu (Brahma) and Santa Gertrudis cattle. Widespread irrigation and the availability of locally produced feeds helped overcome the great losses of livestock commonly experienced during the dry seasons. A number of modern slaughterhouses and cold storage facilities have been built, with the Government assisting breeders associations by granting long-term credits and, in some cases, by build-

ing modern abattoirs and packing plants on its own. The highway network has been expanded and extends into the cattle areas. In addition, many of the distant cattle haciendas have constructed airstrips and are airlifting fresh meat to the cities. Education of the farmers, legal controls, vaccination, and excellent and strict sanitation measures have all helped to curb hoof-and-mouth disease.

The same progress has been made in the production of pork. While formerly practically all pork was imported, the hog population has now reached numbers sufficient to supply the market. Poultry also is produced in sufficient quantities and numerous modern chicken farms are in existence, together with a number of very modern slaughtering and packing plants. Lamb is not a major food item and production therefore is low. Meat production in Venezuela from 1965 through 1967 was as follows:²

Heads Slaughtered	1965	1966	1967
Beef -----	915,545	977,345	1,002,570
Pork -----	682,246	692,650	694,874

² All statistics, unless otherwise indicated, were obtained from the Ministry of Development.



Introduction of modern methods has greatly increased the efficiency of cattle raising. Vaccination and strict sanitation methods have contributed to a curbing of animal diseases.

With the availability of ample supplies of fresh meat, the meat packing and processing industry also has developed rapidly. To protect this industry, the Government has imposed import restrictions on most meat products, including soups having a meat base.

The meat-processing industry now consists of 34 plants with over 1,500 employees and an investment of over \$5 million, not including the modern slaughterhouses and rendering plants recently constructed. Its production increased from 18,908 metric tons in 1965 to 19,110 metric tons in 1967. The only major U. S. investment in this industry is that by Oscar Meyer (Ven-Packers C. A.) Some U. S. products are made locally under license. Frigoríficos Valles Altos C. A., Taf Products Enlatados C. A., Embutidos Shafer C. A., Brill & Voelk Baruta, Ferris Packing Productos, Plumrose S. A., and Diablitos Venezolanos S. A. (Wm. Underwood) are some of the major Venezuelan meat packers. Most firms use modern equipment, usually of U. S., German, or Italian make, and their products are considered to meet adequate quality and sanitary standards.

The utilization of byproducts resulting from slaughtering is rather new in Venezuela. Most of the new slaughterhouses built in recent years have rendering

and byproducts plants. They and a few small commercial plants produce glandular extracts, dried bloods, tankage, horn meal, stearic oil, animal hair, refined greases, tallow, soap-stock, and sulfonated oils and fats (see "Chemical Industry").

Considering the expansion of the meat-packing industry already made, the outlook for sale of U. S. equipment is not as good as it was a few years ago. However, normal expansion and modernization of older plants still represents a good market. Excellent possibilities still exist for joint ventures or licensing arrangements, as U. S. brand name products always find a good reception in this market.

DAIRY PRODUCTS

Steady increases in raw milk production have permitted a considerable expansion in the Venezuelan dairy products industry over the last few years. Raw milk production keeps increasing at a steady rate and reached a total of about 67.5 billion liters delivered into pasteurization and dairy products plants during 1967. The dairy industry has been aided greatly by a

Government-paid subsidy of 0.12 bolivares³ per liter on cold milk and 0.105 bolivares on warm milk delivered into powdered milk and baby milk plants. The Government has budgeted 40 million bolivares a year for this purpose, and during 1967 a total of 263.6 million liters received the benefits of this subsidy. Imports of powdered milk, subject to a system of quotas which are gradually being reduced, decreased from 42,440 metric tons in 1959 to 18,849 metric tons during 1967.

The entire supply of locally produced raw milk is utilized domestically in the production of pasteurized fluid milk, powdered milk, baby milk, butter, ice cream, and cheese, or in farm use. Recent production of dairy products is shown in table 5.

Pasteurized and homogenized fluid milk, packed in waxed or plastic-coated containers made by one manufacturer under license from a U. S. firm, is now available in all urban centers. The areas are served by a number of modern pasteurization and packing plants and the distribution system is effective. The containers are dated. There is a total of 14 pasteurization companies, some having several plants in various towns of the country.

Powdered Milk.—To protect local producers of powdered milk and, at the same time, to keep the price of imported powdered milk low, the Government established a procedure whereby importers are permitted to import one unit of milk duty-free for each unit of milk purchased in the domestic market at the prevailing higher prices. In addition, powdered milk imports are eligible for a subsidy from the Government of 1.15 bolivares per dollar's worth of imported powdered milk.

The production of whole dry milk has continued its upward trend and imports have tended to decline by 20% per year. The powdered milk industry is expected to have sufficient capacity by 1970 to supply the domestic market.

There are now six powdered milk plants in Venezuela. The largest is a subsidiary of Nestle, Industria Lactea Venezolana C. A., with plants in Santa Barbara and Machiques. Lacteos de Venezuela C. A., owned by private local interests in Barquisimeto, ILAPECA, a subsidiary of the International Basic Economy Corporation in Machiques, and CANPROLAC are the other large producers. Milk powders are produced carrying domestic, U.S., and Danish brand names.

Several pharmaceutical companies produce pow-

dered baby milks. Wyeth's S-26, Nestle and Swiss Guigoz are the best-selling brands.

Cheese.—No reliable statistics are available on cheese production. While official figures claim close to 7,000 metric tons, the actual figure probably is much higher, as imports are very low. There are numerous small producers, especially in the interior where the so-called "white cheese" (queso blanco) and "hand cheese" (queso de mano), both whey-type cheeses, are still very popular.

Alimentos Kraft de Venezuela S. A., in Caracas, manufactures the full line of cheeses also produced by its parent company in the United States Brixia C. A., Importaciones Producciones Nacionales C. A. (IPNACA), and Queseria Kempis C. A., all in Caracas, are some of the larger domestic cheese manufacturers. The quality of domestic cheeses has increased considerably during recent years and the quantity is sufficient to meet domestic requirements. Only specialty cheeses are permitted to be imported and their retail price is extremely high.

Butter.—Butter production fluctuates at around 4,000 tons a years. Some of the principal producers are Kupferschmidt S. A., Cremeria Nacional, Juan Ernesto Branger & Cia., and DIPROLAC, all in Caracas. Due to an insufficiency of locally available cream, most butter is produced with imported creams and with a certain content of vegetable oils. The relatively high price of butter and the availability of excellent margarines tend to hinder the growth of the butter industry.

Ice Cream.—According to Government sources, there are 109 manufacturers of ice cream. Most are very small. Productos Efe S. A. and Helados Club in Caracas are by far the largest, with Club having branch plants at Valencia, Maracaibo and Maracay, and Efe in Valencia and Barquisimeto. Production has been stable at somewhat over 20,000 metric tons a year. The variety offered is great, and both major producers constantly add new types and flavors to their lines. Distribution is through street vendors, supermarkets and grocery stores. Smaller ice cream producers are usually of strictly local importance and have no extended distribution systems with the exceptions of Gilda, Dolomiti, and Frappe, all located in Caracas.

Miscellaneous Dairy Products.—Several pasteurizers produce chocolate milk which is sold in wax containers. Yoghurt, acidified milks, whipping cream, sour cream and butter milk are being produced by a number of small manufacturers, mostly in the Caracas area. No production estimates are available.

³ Although one bolivar = US\$0.2222 ordinarily, an exchange rebate granted for imports of powdered milk (and wheat) creates an effective rate of 1 bolivar = \$0.2985 for those products.

PROCESSED AND PREPARED FOODS

Most prepared foods are now being produced in Venezuela, and imports have been reduced to small volume, consisting mostly of specialties. Canning of vegetables has been held at less than sales potential by a shortage of local supplies, and canners have been forced not only to finance crops, but also to give technical help to farmers to increase yield and to guarantee a certain consistency of quality. Great advances have been made, however, and imports of canned vegetables now consist mostly of species not grown in Venezuela. In many cases, the fruit and vegetables are imported and canned locally. C. A. Venezolana de Alimentos (Gerber interests), in Tocoron, Alimentos Heinz C. A., a subsidiary of the H. J. Heinz Co., in San Joaquin, and the Venezuela Trading Company, in Caracas, are some of the largest fruit and vegetable canners. Venezuela now has sufficient capacity to supply the internal market in tomato products, vegetable juices, peas, fruit, and fruit juices.

Government assistance to growers also has made available sufficient quantities of tropical fruit, citrus, and such species as tamarind, passion fruit, guayaba, and guanabana, whose juices are canned or packed in waxed containers. Their growing popularity has caused a decrease in sales of juices made of imported pulps of pears, apples, grapes, apricot, and others. Fruit pulp imports are subject to import licensing in an effort to spur utilization of local fruit. The Fruit Development Fund (Fundo de Desarrollo Fruticola), a Government-sponsored, privately-organized association of fruit growers, is making great efforts towards this goal and also engages in the construction of modern grading, sorting and washing facilities in fruit-growing areas.

Spices are packed by McCormick de Venezuela C. A., by Especieras La India (Greek interests), in Caracas, and by Atlantis Venezolana S.A., in Valencia, which packs French's spices under license.

A growing number of firms, most of them in the Caracas area, manufacture mayonnaise, sauces, mustard, and vinegar. Kraft, in Caracas, Heinz, in San Joaquin, and La Torre del Oro, a local company, are



Workers tend a field of young pineapple plants. Venezuelan industry can now meet local demand for canned fruit juices, as well as for many canned vegetable products.



A picture-book fishing village on the Gulf of Cariaco. Most fishing here is done between midnight and 2 A.M., and the catch delivered to the cannery by 6 A.M.

among the largest. Standard Brands de Venezuela produces Royal brand vinegar and mayonnaise, puddings, and yeast.

Dehydrated soups are produced by a Nestle subsidiary under the Maggi brand and by a subsidiary of the Corn Products Co. under the Knorr brand. This industry is modern in every respect and offers a great variety of types. Canned soups are made by Heinz and by Taf Productos Enlatados, a local firm. Both companies also offer canned foods such as pork and beans, spaghetti sauces, goulash, and similar ready-made dishes.

Baby foods are made by Heinz and by C. A. Venezolana de Alimentos (Gerber), and there are no imports. The full range of baby foods in small glass jars is offered on the market at a reasonable price and good quality. The number of food specialty plants and their production in metric tons, 1965-67, is given in table 6.

Sardines, tuna, mollusks and shrimp are canned by eight plants in eastern Venezuela, although only sardines are canned in sufficient quantity to make some exports possible. A total of 19,292 metric tons of canned sea foods were produced in 1967, of which 440 tons were exported. Frozen shrimp exports during 1967 amounted to 3,300 metric tons, packed in waxed cardboard boxes and airlifted out. The largest canners are

Productos Mar C. A. and Asociacion de Pescadores de Margarita C. A.

Sales opportunities for U. S. equipment manufacturers are good. The food processing industry is still growing, diversifying and modernizing. Equipment importers report great interest in modern food processing and packing equipment. Food packers interested in entering this market should consider licensing or joint venture operations, as there is considerable feeling among Government officials and others that the number of plants is already too large. Another major installation might not be welcome.

MILLING INDUSTRY

Venezuela's milling industry presently consists of 12 flour mills and 21 animal feed mills, including mixing plants. The expansion of the milling industry has been made possible mainly by import restrictions on wheat flour in effect since 1958. Flour production increases are impressive, as seen below (figures in metric tons):

	1958	1965	1966	1967
Wheat -----	26,761	301,695	315,822	322,322
Bran -----	6,064	33,674	40,188	34,537
Others -----	3,844	44,513	44,474	47,128

Wheat is imported mainly from the United States and Canada. Corn reportedly is grown in sufficient quantities, although there are still some imports. Oats are being imported; also barley. Wheat flour consumption has shown yearly increases and fresh bread is replacing the traditional "arepas" (flat toasted corn cakes) to a large degree. However, two modern corn flour mills are producing precooked corn flour specifically for the preparation of "arepas" and these and other corn-flour based products are recovering some of their former popularity.

The flour milling industry consists of four major companies having eight mills and a total investment of over \$20 million. General Mills, Pillsbury, Bunge & Born, and International Milling have made considerable investments in this industry. A number of U. S. brand-name flours are on the market and control a large share of the total. REMAVENCE is the largest corn flour mill. Most of the milling equipment is of U. S. and German origin.

Rice processing and polishing plants are located mainly in the states of Portuguesa and Guarico, the rice growing areas. Rice processing is done by 35 plants which produced 60,578 metric tons of polished rice for sale in bulk and retail pack during 1967. Most of the rice processing plants are Government-owned and operated.

With the consolidated effort by Government and private circles to increase the cattle, hog, and poultry populations, the animal feeds industry has had a rapid development and now meets almost the entire local demand for prepared cattle, hog, poultry, horse, and pet feeds. The industry consists of 21 mills, most of them small. The largest is Protinal C. A., which operates with a capitalization of close to \$10 million. This plant is considered to be the largest of its kind in South America. The second largest mill is that operated by a local subsidiary of Ralston-Purina, with a subsidiary of Pillsbury next in size.

Atlantis Venezolana C. A., in Valencia, mixes bird seeds under license by R. T. French. Canora S. A., a local company, also produces pet bird seeds. Cat and dog foods are canned by Frigorificos Valles Altos in its meat packing plant.

Production of animal feeds in 1967 for the following animals were as follows, in metric tons: cattle, 57,815; horses, 2,170; hogs, 95,391, birds (including poultry), 343,338, and others, 8,988.

The feeds industry uses some locally-produced raw materials, such as fish and bone meal, oil cakes, and corn, but imports a considerable amount of alfalfa,

poultry grains, soybean meal, vitamins, and other additives. The plant equipment is mostly of U. S. origin.

There is a steady, small market for equipment. While the larger mills probably will not engage in any significant expansion for awhile, some smaller mills probably will have to upgrade their equipment and capacities. The demand for grains and other ingredients for feed mixing is expected to increase steadily and Venezuela should continue to represent a significant export market for these commodities.

BAKERY PRODUCTS

Much of the Venezuelan population still shows a preference for the traditional "arepas," mentioned previously. Bread, rolls, and pastries are produced mainly by numerous small bakeries, although industrial bakeries are now obtaining an increasing share of the market. "Holsum" brand bread is now being produced by a subsidiary of the Fuchs Baking Company, while the CADA supermarket chain, owned by the International Basic Economy Corporation, and other smaller firms usually use their own outlets to distribute their bread. By far the greatest percentage of bread is U. S.-style white bread packed in glassine or cellophane. Some European type breads are made by small bakeries.

Figures on total investment and labor force are not available because of the high number of small bakeries throughout the country. However, as the preceding information on the milling industry shows, wheat flour production has increased rapidly, which indicates the expansion of the bakery industry. Equipment imports have been steady at over \$4 million per year and reached \$4.5 million in 1967. The major suppliers of bakery equipment are Italy and West Germany. The popularity of European equipment is probably due to the large proportion of immigrant Italian bakers operating small bakeries.

Pastry baking is also done mostly by small bakeries, although CADA's bakery and Pasteleria Vienes S. A. also offer packaged pastries through their own and other outlets. An important sector of the baking industry consists of the 20 biscuit and cracker factories operating in Venezuela. Nabisco La Favorita, a subsidiary of the National Biscuit Company, in Caracas; Galletería El Ávila, La Suiza, and Sucra de José Puig in Barquisimeto, Maracaibo, and Caracas are other large biscuit bakers. Chocolate-covered biscuits are also made by Savoy Candy, a subsidiary of Beatrice Foods and by La India, a General Foods Corporation affiliate, both in Caracas. All these larger manufacturers offer a wide variety of products in all price ranges up to expensive

gift packs. Production of biscuits and crackers, 1965-67, is given below in metric tons:

	1965	1966	1967
Sweet -----	6,569	8,313	7,963
Salt and soda -----	4,466	4,788	5,415

There are over 50 pasta factories and their annual production increased to 67,163 metric tons during 1967. Most are small. Larger ones are operated by subsidiaries of CADA, Pillsbury, and Pasteleria Vienesana. A very complete line is offered in attractive packaging.

SUGAR REFINING

The sugar industry consists of 12 mills with a total investment of over \$60 million, and a total employment of 6,000 in the mills and over 25,000 in the fields. The Government, through Centrales Azucareros, a subsidiary of the Venezuelan Development Corporation (CVF), operates seven mills and produces close to 50% of the total national output. Production of refined sugar has almost totally replaced that of the traditional brown sugar. Sugar production and exports, 1965-67, in metric tons, were:

	1965	1966	1967
Production -----	340,377	292,146	346,764
Exports ⁴ -----	2,901	16,436	23,050

Venezuelan sugar production during the years 1958 and 1959 dropped to levels which made imports necessary. At that time, the Government expanded its sugar development program by investing \$3 million for the improvement and modernization of the Government-owned sugar mills and by increasing the sugar fund. The fund provides financing assistance for private producers. The existing sugar mills consequently were enlarged and received modern equipment and controls, and greater emphasis on more efficient exploitation of cane. Several small and uneconomical mills were closed and two new ones built, the largest being the Central Portuguesa in Portuguesa State. This one was inaugurated recently and has a capacity for milling 3,000 metric tons of cane a day with built-in facilities to mill twice that amount by 1976.

Sales prospects for equipment for the next few years appear to be limited. After the opening of the Portuguesa mill and conclusion of the modernization plan, installed capacity would appear to be sufficient to absorb the growing demand.

The soft drink industry, which uses close to 23% of total production, the confectionery industry and the bakery industry are the most important industrial con-

sumers. For retail sale, sugar is offered in paper bags and in boxes of lump sugar. It is also sold in small glassine portion-packs for use mainly in restaurants and cafeterias. Sugar distribution is carried out by the Distribuidora Venezolana de Azucares (DVA), an organization of all sugar producers, including the Government company. DVA estimates that by 1970, total production will amount to 464,000 tons a year with internal consumption of 357,000 metric tons.

CONFECTIONERY INDUSTRY

With sugar and cocoa traditionally available locally, the Venezuelan confectionery industry had an early start. "La India," with Swiss investment, was founded in 1861 to produce chocolate. The industry now consists of eight large and numerous very small manufacturers producing many types of chocolate, cocoa powder, soft and hard candy, chewing gum, jellies, jams, breakfast drinks, powdered soft drinks, appetizers, and cold cereals. Official statistics are sketchy, but do give an idea of the production volume of the industry (see table 7).

The industry is able to supply the local demand for these products, and imports have been negligible. Furthermore, the industry is protected by a high tariff.

Industry sources estimate that total investment amounts to over \$15 million and that approximately 1,200 people are employed. Most of the larger manufacturers, such as Savoy Candy (Beatrice Food subsidiary), La India (General Foods), La Suiza, Fiesta, and Lady, produce a wide variety of sweets. The largest marmalade manufacturers are Industrias Melrose and Pasteleria Vienesana, recently bought by Pepsico, Inc. of New York. Chicle Company is the largest local chewing gum manufacturer.

Although the Venezuelan products are considered to be of excellent quality, and are attractively packed, the high price of production so far has limited exports to occasional small orders. The equipment used by the manufacturers is mainly of U. S. and German origin. The market for U. S. equipment still appears to be good, as many firms are still growing and modernizing. For example, Savoy Candy and its subsidiary, Marlon C. A., a party snack manufacturer, recently built a large new plant. Flavors and some packaging material also continue to be imported, but cans, foil, boxes, and most other packaging materials except glassine are of local manufacture. The industry shows great interest in making U. S. candy under license, and U. S. manufacturers interested in entering this market should first consider licensing or joint ventures.

⁴ Includes molasses.

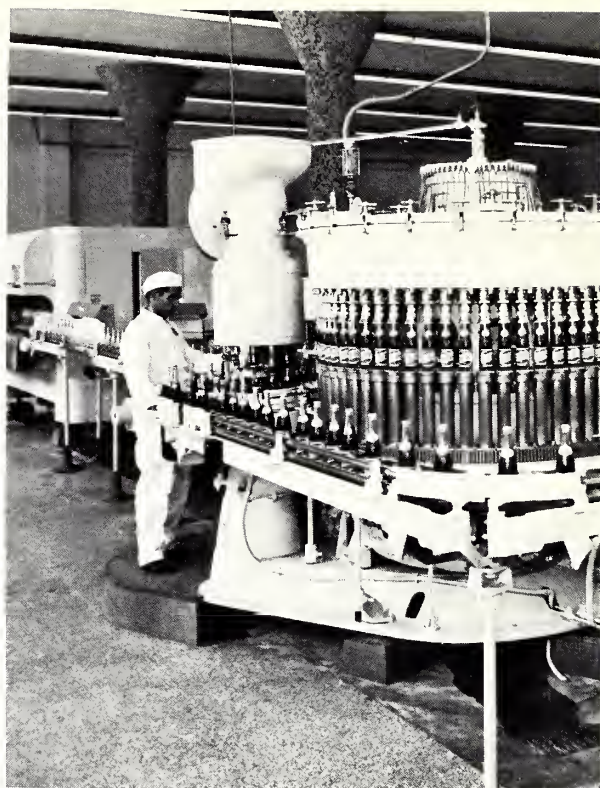
BEVERAGES

Soft Drinks.—Helped by the tropical climate, the soft drink industry of Venezuela is growing at a rapid rate. Production increased from about 120 million liters in 1950 to 485 million liters in 1965, and 557 million liters in 1967. The number of plants decreased from 80 in 1962 to 73 in 1968 as a result of the construction of larger and more efficient plants by the large manufacturers and the disappearance of a few local brands which did not find a sufficient market. The industry, including its distribution organizations, is reported to employ close to 80,000 people. The majority of sales are concentrated on a few highly advertised brands, of which Pepsi Cola (produced by local licensees) and Coca Cola (produced by subsidiaries as well as by licensees) are the leaders. Orange Crush and the Italian Chinotto are also popular brands. Some of the syrups are now made locally by Coca Cola, Pepsi Cola, and by a department of Liquid Carbonic de Venezuela, a subsidiary of the U. S. firm of the same name. Distribution is very effective and literally covers the entire country. Bottles, crown caps and cans, as well as wooden, cardboard and plastic cases, are of local manufacture.

Alcoholic Beverages.—The local brewery industry is dominated by two companies: Cerveceria Polar C. A., capitalization 50 million bolivares, and Cerveceria Nacional C. A., capitalized at 65 million bolivares. These firms own practically all other breweries in the country, although their own brands are also distributed nationwide. Their production increased from 279 million liters in 1965 to 332 million liters during 1967. The industry has to import almost all of its raw material and only buys bottles, caps, and cans locally. Canned beer has only a minute share of the market and has not become popular. The industry uses mostly German equipment and methods, but some U. S. equipment and instrumentation has been installed recently.

No grapes are grown in Venezuela and wines are produced by imported mashes, musts, and concentrates. No production statistics are available. Vermouths are produced by Cinzano, Martini Rossi, and others. Montesanto, Chianti and other Italian wines are locally prepared but must compete with imported Italian, Chilean, and German wines. Champagne is produced by Industrias Pampero, the largest Venezuelan rum distiller.

Rum, both aged and white, is the most popular high proof drink and, with "aguardiente", an unrefined, unaged sugarcane distillate, are the lowest-priced distilled liquors. There are numerous brands. "Cacique", made



A filling machine and crowner in operation at Pepsi-Cola bottling plant in Antimano.

by Licorerias Unidas, near Barquisimeto (a Seagrams subsidiary), various Pampero brands and Santa Teresa enjoy the greatest sales. While separate consumption statistics for rum are not available, distillation of alcohol of proof grades customary for both rum and gin (also made by Pampero and Licorerias Unidas) amounted to over 20.2 million liters in 1965, 23.4 million liters in 1966 and 21.6 million liters during 1967.

Gins, vodka, brandy, and cordials of many well-known brand names such as Beefeater's, Gordon's, Hennessy, Martell, Bols, Cointreau, and others are made under license from imported concentrates, flavors, or supplied recipes. Licorerias Unidas, Pampero, Santa Teresa, and Duncan, Gilbey, and Matheson de Venezuela are some of the major distillers.

Scotch whiskey is favored by most Venezuelans and bourbon imports are very low. Scotch of the Seagram's brand is made by Licorerias Unidas and is the only whiskey produced in Venezuela. Although bourbon and rye whiskeys can enter the country under special tariff concessions granted by the Reciprocal Trade Agreement between the United States and Venezuela, imports have been extremely low and sales are mostly to Americans. No upturn in the local consumption of bourbon or rye is foreseen.

Market opportunities for U. S. companies seem to exist mostly in high-speed bottling machinery.

EDIBLE OILS AND FATS

Venezuela's edible oil industry has sufficient capacity to supply the domestic demand for sesame, cottonseed, and coconut oils, but olive oil and peanut oil are being imported. Corn oil production was started during 1967.

Production of edible oils (metric tons) has shown gradual increases:

	1965	1966	1967
Sesame oil -----	28,365	32,035	31,578
Cottonseed oil -----	3,798	4,056	4,528
Coconut oil -----	644	746	384

There are 10 plants with a total investment of close to \$25 million, and roughly 1,500 employees. The largest are Juan Ernesto Branger & Cia. (trade mark BRANCA); MAVESA (Vatel); Grasas de Valencia (Diana) and Facegra (El Rey), all with plants in Caracas or Valencia. Edible oils are packed in metal containers, and plastic and glass bottles, and are distributed nationwide. While sesame seed production in Venezuela is now sufficient to supply these plants, imports of crude cottonseed oil and of copra are still required. Peanut oil production is planned to commence within the next 2 years, as large peanut planta-

tions are now being established with Government financial assistance. Peanut oil is consumed mainly by the sardine canners, and imports during 1967 amounted to over 5,000 metric tons. No soybean oil is produced, and animal feeds mixers imported 4,600 metric tons during the same year. The industry uses very modern methods and the quality of the locally produced edible oils is generally considered excellent.

There are 10 vegetable shortening and margarine producers in Venezuela, of which MAVESA (Procter & Gamble minority participation), in Caracas, is the largest. Production statistics, shown below in metric tons, indicate the popularity of these edible fats:

	1965	1966	1967
Vegetable shortening -----	36,313	31,767	32,836
Margarine -----	9,151	8,845	10,070

Venezuela has traditionally been a hog lard consumer, but trends have changed toward edible vegetable oils and fats. Health reasons may have contributed to this change.

The industry is protected by high tariffs. Most of the raw material, chemicals, and packaging material are available from local producers. Sales opportunities for U. S. exporters seem to exist primarily for equipment. A great expansion cannot be expected. The industry is reported to be working at far below its installed capacity and seems to be able to absorb the market growth.

Tobacco Products

The Venezuelan tobacco products industry has sufficient capacity to supply the increasing demand for cigarettes, cigars, and pipe tobacco. There are three cigarette manufacturers with a total investment of close to \$60 million. They are owned by two companies, Cigarrera Bigott Sucesores, a subsidiary of the British American Tobacco Company, and Tabacalera Nacional C. A., a Philip Morris subsidiary, with some local capital also invested. This industry directly employs over 2,000 persons and engages heavily in tobacco financing through previous contracting of crops. In addition, collection, storage and curing plants have been installed by the industry in tobacco-growing regions of Venezuela. The equipment is modern in every respect. Cigarette machines are mainly of German manufacture. While cigarette paper is being imported, the industry now uses only locally made filters and packaging material. A great variety of brands, U. S. and domestic, is being produced, and most are heavily advertised. The cigarette industry is protected against import competition and legal cigarette imports are negligible. However, the industry claims that contraband cigarettes are entering the country at a rate of over 100 million per year, and that this traffic is hurting domestic producers. Nevertheless, production increased considerably

after the industry received protection, and is continuing to grow, as seen by figures below (in thousands of cigarettes) :

	1959	1965	1966	1967
Black -----	1,076,135	485,081	430,045	407,408
Virginia ----	3,398,433	9,064,082	9,245,820	9,995,114

These figures also indicate the growing popularity of Virginia-type tobacco. There are still some imports of tobacco for blending purposes, amounting to 1,116 metric tons in 1967. These are mostly oriental types transshipped through the United States.

The cigar industry, once primarily a cottage industry around the Cumana area, now consists of 18 producers, of which the cigarette manufacturers or their subsidiaries are the largest. Cigar production increased from 93 million units in 1965 to 102 million units during 1967. Pipe tobacco also is being produced, but statistics are not available.

Imports of equipment have recently been around \$500,000 per year. Germany has been the main supplier. No significant change can be expected in this market picture in the near future.

Textile and Related Products

The textile and clothing industries are two of the oldest and most important in Venezuela. In terms of total value of industrial production, these two industries, combined, rank third behind the petroleum and food industries. Total production value during 1965 amounted to \$257 million; in 1966, to \$262 million, and during 1967, to \$273 million.

The first weaving machines were installed in 1850. By 1945 the industry had grown to 10 mills employing 4,000 people. Growth continued to be rapid during the fifties but by 1958 the industry was suffering from four major adverse situations: consumer preference for foreign goods; lack of Government protection; obsolete equipment; and the necessity of having to import most of the raw material. These factors, combined with the high cost of labor, resulted in high prices, further damaging the industry's marketing possibilities.

Beginning in 1958, the Government initiated a policy of intensive encouragement of this sector of the economy. During the subsequent 5-year period, more Government credit was extended through the Corporación Venezolana de Fomento to this industry than to any other.

As the installation of more modern machines started

to show results by production of more and better textiles at no increase in retail price, a series of tariff increases, import licensing requirements and quantitative import restrictions were imposed on those products which competed with domestic textiles. During the years 1958-61, the textile industry increased its production by 50% and doubled the number of workers. Diversification also became greater and new types of fabrics and fibers were added to the companies' output. As a result of this increase, the textile industry now supplies over 90% of the country's textile requirements.

The industry now consists of 78 primary textile mills plus another 70 converters, texturizers, and knitting mills, employing over 17,000 workers and having an estimated total investment of over \$155 million. In addition, the estimated 500 clothing manufacturers—most of them quite small—employ another 30,000 persons and have an investment of over \$50 million. Equipment in the primary textile mills in recent years is shown in table 8.

No figures are available on equipment installed in knitting mills. Estimates range around 800 knitting machines. However, modernization of the industry has caused it to install the most up-to-date equipment in

Latin America. Recent-model Jacquard, links-links, tubular, flat, and double-knit machines have been installed, and there are 44 Raschel and 228 Ketty-Ketty machines in the country.

The auxiliary industries have attempted to keep up with the steadily increasing requirements of the textile industry. Apart from texturization, the supporting industry can now supply cardboard and plastic bobbins and spools, acids, silicates, caustic soda, formaldehyde, detergents, dressing and bleaching agents, starches, carboxy-methyl-cellulose, and various resins and polymers. Thus, wrinkle-proof and wash-and-wear processing is being done, utilizing locally-produced chemicals.

The general trend towards reducing costs has resulted in some mergers and in the construction of spacious, modern plants with excellent layouts, efficient quality-control laboratories, climate control, and high-speed materials handling equipment. Thus, the industry hopes to be able to compete in an eventual common market in spite of its labor costs, which are the highest in Latin America, as shown in table 9.

The general outlook for the United States appears to be good for exports of textile machinery. Venezuelan imports during 1967 amounted to \$10,989,000, of which the United States supplied \$3,685,000, with Germany being the second most important supplier. Further import restrictions on textiles, fibers, yarns, and clothing can be expected, and textile imports will be replaced by more machinery and raw material imports.

COTTON TEXTILES

Most of the primary textile mills produce cotton fabrics, primarily, since these are the most popular and inexpensive textile products. Production has shown constant increases over the years, as seen for 1966-67 in table 10.

The cotton industry is able to obtain an increasing percentage of its raw material from local cotton growers. Production during 1967 amounted to 44,023 metric tons of fiber lengths up to $1\frac{1}{16}$ inches. Longer fiber lengths are still being imported, mainly from Peru and the Sudan.

Some of the most important mills are Telares Los Andes, Telares Palo Grande, both in Caracas; Telmartex (Johnathan Logan subsidiary, resulting from a merger of the former Texfin and Telares Maracay), in Maracay; and Telares Branger, in Valencia. J. P. Coats & Co. operates a sewing thread mill near San Joaquin. Hilanderias Venezuela, which recently bought Telares Branger to form the largest Venezuelan spinning and

weaving combine, and Hilanderias Cumana are two of the largest spinning mills.

SYNTHETICS

Venezuela's synthetic textile fiber industry consists of several American companies, and produces a considerable amount of artificial and synthetic fibers and yarns. The industry is modern in every aspect. Production during 1967 amounted to the following:

Acetate filaments -----	6,952,800 pounds
Short fiber acetate -----	336,200 pounds
Cigarette tow -----	2,422,200 pounds
Nylon 6 filaments -----	4,869,200 pounds
Polyester fiber -----	3,557,700 pounds

The industry at present is using almost all its installed capacity with the exception of the polyester plants, which are using less than half their total built-in capacity of 8 million pounds per year.

The most important plants are Celanese Venezolana in Valencia, producing acetate, rayon, cigarette tow, nylon-6, and polyester fiber; Sudamtex de Venezuela and its subsidiaries, Sudalon and Sudasetta, producing the same type of fibers in Maracay, in Venezuela's largest synthetics spinning and weaving mill; and Telmartex, in Maracay, mentioned under Cotton Textiles, which is the newest polyester producer.

During 1967 the synthetics weaving mills produced 37 million meters of fabrics and 4 million meters of synthetics fabrics mixed with cotton, while knitting mills manufactured 886 metric tons of knit fabrics from man-made fiber yarns. There are reportedly seven texturization plants producing texturized and stretch nylon.

WOOLEN TEXTILES

Production of worsteds started in 1963, mainly by Textilana, in Caracas. The fabrics produced are reportedly of excellent quality, with emphasis on tropical lightweights. The same mill started wool spinning during 1966. Production in 1967 amounted to 485,000 meters of fabrics containing less than 30% wool and 2,442,000 meters with over 30% wool content.

CARPETS

Venezuela has four carpet mills with a total invested capital of roughly \$1 million, and several hundred employees. This industry early in its existence received protection against imports, and also received further impetus with the start-up of production of automobile

carpeting for local assemblers. The output includes nylon, cotton and woolen rugs, carpets, mats, and automobile carpeting. Sisal rugs are also popular.

OTHER TEXTILE PRODUCTS

Two companies weave linen but there is no linen spinning. There are five lace and embroidery mills, jointly able to satisfy domestic requirements.

A number of small weavers of narrow fabrics, labels, and elastics exist. They have sufficient installed capacity to supply the market and are protected by high duties. Textilera Libertador, in Caracas, is the only Venezuelan weaver of curtains and upholstery fabrics.

CLOTHING

Venezuela is estimated to have over 500 clothing manufacturers, most of which have fewer than 50 employees. Some of the larger men's wear manufacturers are Confecciones HRH, which also produces under license, "Jockey" brand men's underwear and "Jantzen" bathing suits, Trajes Wendell, Monaco, Larry's, and a few others. Selecciones Selemar and Tropicana are two of the larger ladies' wear manufacturers. Ladies' under-

wear of well-known U. S. brands is being manufactured by Roth de Venezuela (Kaiser), Exquisite Form Brassiere de Venezuela, Textilera Gran Colombia, and Van Raalte, among others. Men's shirts manufacturers include Vesta C. A. (Van Heusen), Manhattan de Venezuela, and Industrias Jatu (Arrow), in Maracaibo. Several plants manufacture neckties, handkerchiefs, bathing suits, and sportswear.

The industry is protected by extremely high tariffs and/or import licensing requirements and is able to satisfy almost all local demand for outer and underwear.

HARD FIBER PRODUCTS

Venezuela is self-sufficient in the production of hard fiber goods, using sisal which is grown locally in adequate amounts. The industry began production in 1940, with one bag and one rope factory, and is now centered in the principal sisal growing area around Barquisimeto, although one large factory is located in Caracas.

Rope up to 3½ inches in diameter is being produced at an average rate of 300 tons a month. The quality is considered good and occasional exports have been made, including sales to the United States Navy dur-



Sisal being laid out to dry in the sun. The principal growing area is around Barquisimeto. Local production is adequate to support the nation's output of hard fiber goods. Venezuela has become self-supporting in these goods over the past 30 years.

ing the Korean War. The principal manufacturers are Dougherty Cordage Mills, in Caracas, and Sisalara and Sisaltex, both in the Barquisimeto area. All these mills also produce nylon rope and nylon and sisal fishing nets. Sacks are manufactured by these firms and by a number of small manufacturers. Roughly 8.5 million sisal sacks were produced during 1967, along with a

small quantity of cotton sacks. All manufacturers except one use flat knitting mills.

The industry reportedly has much old machinery which eventually will have to be replaced. This replacement market, in addition to the market being created by necessary expansion and diversification, should provide sales potential to U. S. manufacturers of such equipment.

Chemicals and Chemical Products

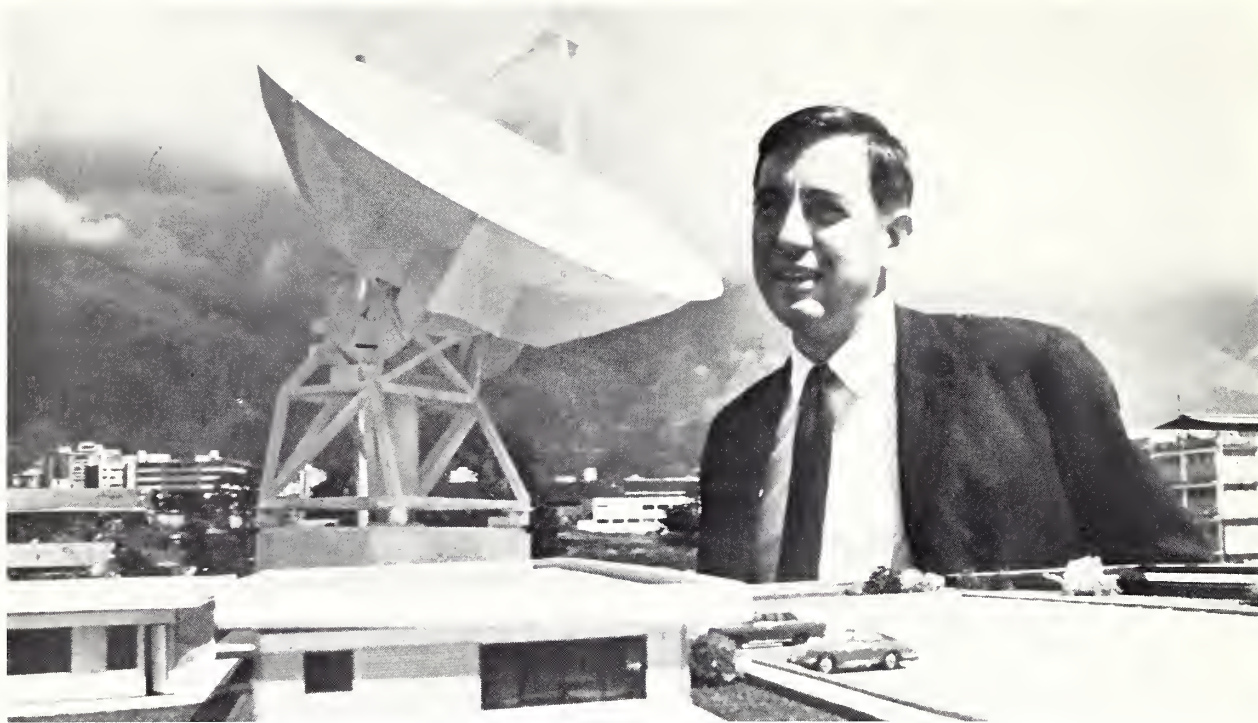
The Venezuelan chemical industry is rather new and still in a phase of rapid development. The real beginning of the industry was in 1956 when the Instituto Venezolano de la Petroquímica (IVP) started construction of a large Government-owned complex using natural gas as the major raw material to produce acids and fertilizers. Today, the IVP plant at Moron is still the only major basic chemicals plant and is effectively serving as a base for further development, producing a number of basic chemicals used by the privately-owned chemical and chemical products industries as raw materials. Investment activity of the private sector has increased in recent years and a number of privately-owned plants have initiated production of those industrial chemicals whose domestic consumption warrants the heavy investments involved.

The limited size of the domestic market for basic chemicals will not support large-scale production of most of them. Consequently the chemical industry, which has been encouraged by the Government to supply the local market under the protection of high tariffs and import licensing requirements, is generally a high-cost, high-price industry.

The primary future development will be in the Gov-

ernment or the joint sector, mainly by the enlargement of the petrochemical industries. Although IVP is still producing at high cost, its enlargement program includes the construction of plants (ethylene, polyethylene, mono-and poly-vinyl chloride, poli-isoprene, caustic soda, ammonia, urea, isopropanol, and propylene oxide) which will be of economical size but will depend to a large degree on exports. This is one of the reasons why IVP is accepting large foreign companies as partners in projects related to the petrochemical complex which will be built at El Tablazo at the edge of Lake Maracaibo. IVP feels that, apart from the contribution of capital and technical know-how, these foreign partners will contribute their marketing knowledge and access to parts of their own markets.

The total value of production of the chemical and chemical products industry rose from \$113 million in 1960 to \$187 million in 1965 and to \$206 million during 1967. The industry is estimated to have close to 7,000 employees and total investment in fixed assets is estimated to be over \$300 million. Investment opportunities continue to be excellent. Equipment purchases will be high for many years to come and the industry will require, in addition to money and hardware, a



Model of a \$5.7 million earth satellite communications center which is to be built in Venezuela by General Telephone & Electronics International Incorporated.

considerable amount of technical assistance. Thus, joint ventures, licensing arrangements, and turnkey plant sales should constitute additional opportunities for U. S. firms.

THE PRIVATE SECTOR

Due to the high investment required in relation to the small market, the private sector has not had its greatest development in the manufacture of basic chemicals, but rather in that of chemical products. The privately-owned chemical and chemical products industry will be described according to the major product groups:

Acids.—Quimica Tapa Tapa near Maracay is the only privately owned acids manufacturer. The small plant produces daily 3 tons of hydrochloric acid, 250 tons of sulfuric acid, 10 tons of phosphoric acid, 186 tons of nitric acid at 5%, and 30 tons of nitric acid at 98%.

Industrial Gases.—In 1967, eight companies with 21 plants produced 4,391,713 cubic meters of industrial and medicinal oxygen, 648,368 kilograms of acetylene, and 5,713,097 kilograms of carbon dioxide and dry ice. In addition, unknown amounts of nitrous oxygen and some hydrogen were produced. Major companies are AGA (Swedish capital, Gases Industri-

ales de Venezuela (Chemetron Corporation), Liquid Carbonic de Venezuela (subsidiary of the U. S. firm Liquid Carbonic), all in Caracas, and Oxigeno Carabobo, in Valencia. These firms supply the entire domestic requirement for these gases.

Alcohols.—Ethyl alcohol is distilled from sugar cane by Destileria Yaracuy, in Yaracuy State, and by Licorerias Unidas, near Barquisimeto. Production during 1967 in the 114 to 196 proof range amounted to 17,200,000 liters. Some grain and potato alcohol is now being distilled for use by the pharmaceutical and cosmetics industries. Isopropyl alcohol is available from the Creole and Shell refineries. Methyl alcohol is not being produced. Industria Venezolana de Alcoholes Sulfonados C. A., in Caracas, is producing unknown quantities of sulfonated alcohols and greases.

Synthetic Resins.—An increasing variety of synthetic resins, mainly in emulsion or solution form, is being manufactured in Venezuela, with the range now including urea and phenol formaldehyde, acrylics, polyvinyl acetate, melamin resins, standard alkyds, ester gums, epoxy esters, epoxy oils, maleics, fumarics and resinated oils, and epoxy varnishes. The major manufacturer of these resins is Resimen C. A., in Valencia, a subsidiary of the Montana group of firms in Caracas, (described under "Paints and Printing Inks," below),

with 10 reactors and 1,200 tons per month capacity. Venezolana de Resinas C. A., near Maracay, a subsidiary of Ashland Chemical Co. and of Tenneco in the United States, with a 2-reactor plant of 450 tons monthly capacity, produces monomer and polymer plasticizers, alkyd and epoxy resins, modified resins, phenol, iso-phthalic polyesters, poly-urethane resins and butylated resins for the textile, lumber, and paper industries. Total investment in the synthetic resins industry is estimated at \$12 million.

Quimicas Leros, in Caracas, operates a small one-reactor plant with a capacity of 120 tons per month under technical supervision of the Borden Company to manufacture formaldehyde, urea formaldehyde, phenolic resins, emulsions, glues, and adhesives.

The paint plants of Du Pont, Sherwin-Williams, and Pinco-Pittsburgh operate small alkyd plants for their own consumption. The adhesives plant of Couttenye & Hijos in Caracas has a 3-reactor installation for the production of polyvinyl acetate and resin/emulsions with a capacity of 30 tons per day, and is installing three more reactors which are scheduled to be in place by the end of the year.

A subsidiary of the German firm Farbwerke Hoechst, near Maracay, produces carboxy-methyl-cellulose, a textile sizing.

Synthetic resins in granular or powder form for plastics molding are still being imported. The construction of a phthalic anhydride plant is under way by Oxidaciones Organicas C. A., in Valencia.

Glycerine.—Las Llaves S. A., in Puerto Cabello, a subsidiary of the MAVESA margarine and edible oil producer in Caracas, is the only Venezuelan producer of glycerine. The plant has an installed capacity of 60 metric tons per month, sufficient for local consumption.

Fatty Acids and Greases.—This industry recently received protection against imports. Borth C. A., a subsidiary of Juan Ernesto Branger & Cia in Caracas, an edible oil manufacturer, is one of the largest Venezuelan producers of stearic and oleic acids, fatty acids, and tallow oils. The afore-mentioned Industria Venezolana de Alcoholes Sulfonatos also produces sulfonated greases and oils, and Sulfon Chemical manufactures fatty acids and greases.

Inorganic Chemicals.—The range of inorganic chemicals produced in Venezuela is small. Lead oxide of the Pb_2O type of storage battery manufacture is being produced by four plants with a reported capacity of 5,000 pounds per hour, sufficient for local requirements. Carbon black is being produced from crude oil by United Carbon de Venezuela in Valencia. The plant produces five types of carbon black at a rate of 14

million pounds annually for the tire and ink industries.

Deltaquim, in Caracas, a rather new firm, produces copper, iron and sodium sulfate, ammonia chloride, and iron oxide. Silicates for the detergent, glass, and refractory industries are being produced by Silicatos de Venezuela near Caracas (10 tons a day), and silica powder is manufactured by Silica Nacional C. A., near Valencia, at a rate of 3 tons a day.

Salt (sodium chloride) is obtained from seawater evaporation in basins along Venezuela's seacoast. Total production during 1967 amounted to 171,000 metric tons. While salt production is a government monopoly and was once controlled by the Ministry of Finance, the entire industry was recently turned over to IVP. Refining and packing is done by private companies.

Calcium hydroxide and calcium oxide are being produced by four small firms, reportedly in amounts sufficient to meet domestic demand.

Zinc oxides for pigment and at USP grade are being produced by the Montana Group of companies.

THE GOVERNMENT SECTOR

IVP, at its original plant at Moron, is producing a number of chemical products with installed capacities as shown in table 11.

The 16,300 barrels-per-day crude oil refinery in the Moron complex was transferred to the Corporacion Venezolana de Petroleo (CVP), the Government-owned oil company. It produces, in addition to some gasoline, 17 barrels of benzene, 21 barrels of toluene, and 29 barrels of xylene per day.

IVP's civil explosives plant, also at Moron, produces 23,500 metric tons of dynamite a year plus 5,800 tons of ammonite, 2,300 tons of ammogelatin, and 2,000 tons of primers.

A new sulphuric acid plant has gone on stream at Moron and the phosphoric acid plant is to be enlarged in order to increase the fertilizer capacity.

Quimicas Venoco C. A., in Valencia, a joint venture between IVP, C. A. Nacional de Grasas Lubrificantes (a privately-owned lubricating grease manufacturer), Philips Investment Corporation, and an investment company owned by Shell, was recently inaugurated and is producing dodecyl-benzene at a rate of 15,000 tons per year. The investment in this plant amounted to \$3 million.

IVP has major expansion plans. The largest complex of new IVP plants will go up in El Tablazo on the entrance to Lake Maracaibo. The first major plant will be that of Nitroven, to produce 1,800 metric tons of

ammonia and 1,400 tons of urea daily. This plant, scheduled for completion in late 1970, is a joint venture between IVP and International Investment (IDI), a U. S.—European consortium.

Unicar Petroquímica C. A. was founded in 1967 as a joint venture between IVP and Union Carbide for the construction and operation of a \$30 million plant in El Tablazo to produce 50,000 metric tons per year of low density polyethylene. About 80% of the output will be exported.

El Tablazo's nucleus will be an \$11 million cracking plant, wholly-owned by IVP, which will produce 150,000 tons of ethylene annually, reportedly enough to supply 2.5% of the world demand for this gas. Also, 85,000 tons per year of propylene will be produced.

PETROLEUM INDUSTRY

Although the petroleum industry is not generally considered a manufacturing industry, it is described here briefly, in view of its importance to Venezuela's industrial and general economic well-being.



Petroleum drill about to be set on Lake Maracaibo.

During 1968, Venezuela ranked as the world's third largest oil producer and the world's largest exporter. Production during that year averaged 3,604,756 barrels per day, of which 1,349,200 barrels were refined. Exports amounted to 3,368,461 barrels per day, or 93.4% of production. Roughly 72% of the total exports consisted of crude. There are 14 refineries with capacity to process 1,350,000 barrels of crude per day. The largest refineries are located at Amuay and Punta Cardon.

A breakdown of exports during 1967 (table 12) shows the types of refinery products which Venezuela places on the world market.

Proved reserves presently are calculated at about 15.7 billion barrels, or enough for 13 years at the present rate of production. However, there has been relatively little exploration activity recently and actual reserves are probably much higher. The industry invested 571 million bolivares during 1967. Investments for 1969 will probably be much higher due to the construction of two desulphurization plants.

Production of natural gas amounted to 45.8 billion cubic meters during 1967 of which 28.1 billion cubic meters were utilized as fuel or by petrochemical installations. The gas distribution network is being expanded by CVP to reach most industrial and residential areas in cities.

In addition to normal refinery products, Venezuelan refineries produce paraffin, naphtha, and phenol extracts. Lubricating greases are produced by C. A. Nacional de Grasas Lubricantes in Valencia, while Shell, Creole, and Mobil produce lubricating oils.

Among the largest U. S. oil companies operating in Venezuela are Creole Petroleum Corporation (Standard Oil of New Jersey), Mobil Oil Company (Socony Mobil Company), and Mene Grande Oil Company (Gulf Oil Company). The only non-U. S. oil company active in Venezuela is Compania Shell de Venezuela.

CHEMICAL PRODUCTS

Paints and Printing Inks.—Venezuela is virtually self-sufficient in the manufacture of paints. Imports consist of some specialty paints, mainly for industrial purposes, and of some spray paints, although aerosol packing of paints is also done in the country. The industry now consists of 13 manufacturers, of which only five can be considered large. It is estimated that the industry has a total investment of over \$20 million, and close to 2,000 employees. Production has shown gradual increases, as shown in table 13.

Oil base paints, rubber base paints, acrylic and

acro-vinyl paints, enamels, automobile lacquers, varnishes, and marine and anti-corrosion paints are being produced. The raw material has to be almost entirely imported. Pigment imports during 1967 amounted to 6,739 metric tons, of which the United States supplied 734 tons.

Besides the packaging material, synthetic resin ingredients are almost the only locally produced raw materials. Montana Fabrica de Pintura is the largest Venezuelan paint manufacturer. The Montana group, whose nucleus was the paint company, now consists of a number of enterprises engaged in printing, manufacture of paint brushes, printing ink, rotogravure cylinders, and synthetic resins. Other large manufacturers are Du Pont de Venezuela (subsidiary of the U. S. company), Sherwin-Williams Venezolana (licensee), and Pinco-Pittsburgh (joint venture with Pittsburgh Plate Glass Company). The quality of the Venezuelan-made paint is generally considered excellent.

Printing inks are made by four manufacturers and one mixer. A full line of inks for general printing, flexography, textiles, metal lithography, and plastics is produced. Installed capacity is reported to be close to 1,000 metric tons per year with annual consumption averaging 600 tons. Sun Chemical's subsidiary, Fuchs & Lang Sun Chemical de Venezuela, is the largest manufacturer, with Interchemical and J. M. Huber, both subsidiaries of the U. S. companies, and Grafis C. A., another member of the Montana group, being the other major manufacturers. Tintas Crescent is a small mixer. All firms operate entirely with imported raw materials. Laboratories in all plants are able to prepare formulas and color tones for special customer requirements. No writing inks are presently being produced in Venezuela.

Cosmetics and Toilet Preparations.—For all practical purposes, Venezuela is self-sufficient in the manufacture of these products. Practically all famous brands are represented by subsidiaries or licensees. The industry is estimated to consist of close to 50 firms with 2,500 employees and is reported to have \$20 million in fixed assets. Its products include perfumes and colognes, lotions, talcs, cosmetic products, nail polishes, shampoos, and toilet soaps. Avon Cosmetics, Helena Rubinstein, Helen Curtis, Max Factor, Breck, and Shulton are some of the major U. S. manufacturers. Products of Wella and 4711 of Germany and Christian Dior and Chanel of France are also made in Venezuela. A local subsidiary of Johnson & Johnson and a licensee of Mennen are major producers of baby care products.

The industry has to import practically all its raw materials, and purchases locally only alcohol, starches,

palm oil, and most containers. High import duties protect the industry, and imports now consist primarily of bulk cosmetics and certain ingredients for local processing.

Future opportunities for U. S. companies exist mainly in semi-finished materials, raw materials, and equipment. U. S. manufacturers of cosmetics desirous of entering the Venezuelan market will have to establish facilities in the country or work with a licensee.

Cleaning and Maintenance Preparations.—A growing variety of such products are being made in Venezuela. The Venezuelan detergent industry is controlled by three U. S. firms, Colgate-Palmolive, in Valencia, Procter & Gamble, in Caracas, and Wyandotte de Venezuela, in Guarenas. While the first two make full lines of household detergents and their popular brands of toilet products and soaps, Wyandotte specializes in industrial detergents and controlled foam detergents. Small local companies, all of them employing the dry mix process, are Quimicas Caracas, Laboratorio Quimico Industria Mabo's, and Tecnoquim, the latter also a subsidiary of a U. S. firm (Diversey Corporation). Production of detergents amounted to 31,620 metric tons during 1967. The industry obtains caustic soda and some silicates locally and soon will be able to obtain dodecyl benzene from the new Quimicas Venoco plant near Maracay.

Toilet and laundry soaps are being made by close to 20 manufacturers, with Procter & Gamble, Lever S. A., and Colgate-Palmolive being the market leaders for toilet soaps. The most important laundry soap producer is Las Llaves S. A., in Puerto Cabello (also the only Venezuelan glycerine manufacturer). Production of soaps amounted to 26,137 metric tons during 1967. The soap industry imports some of its raw material, but also is able to buy increasing amounts of animal greases from domestic slaughterhouses.

Floor waxes are made by 12 smaller firms, which produced 3,185 metric tons during 1967. S. C. Johnson & Sons is the major American firm making waxes in Venezuela. Automobile polishes and waxes are also made by Dupont de Venezuela. Furniture polishes, glass cleaners, oven cleaners, scouring powders, and similar household cleaning products are made by a number of local firms, some of which are Productos Cruz Verde, Zeralac, Industrias Superbrillo, and Atlantis Venezolana.

Industrial maintenance compounds are made by National Chemsearch, Comercial Numara, Sintesia, and Nalco de Venezuela, which also makes water treatment compounds. Production statistics are not available.

Pharmaceutical Products.—Venezuela's pharmaceutical industry grew rapidly during the years 1960-67, aided considerably by import restrictions designed to protect it. While imports of medicines amounted to \$29 million in 1960, they were only \$20 million in 1967, consisting to a large degree of bulk pharmaceuticals for local formulation. The value of domestic production has passed the \$45 million mark. The industry, now consisting of approximately 80 companies with a total investment of over \$100 million and total employment of over 4,000, claims to supply the market with 85% of all medicines by volume and over 75% by variety. A considerable range of local products is protected against competition from imports, especially vitamin products, antihistamines, pectorals, and analgesic, antipyretic, antidiarrheal, and antianemic products.

The industry basically formulates and packs, although there is a growing variety of locally developed patent medicines. However, in almost all cases these products are based on modern concepts of chemotherapy. As there is no local manufacture of fine or medicinal chemicals, almost all the raw materials are being imported in semi-finished or bulk form. Starch, sugar, alcohol, and isopropyl alcohol are almost the only locally available ingredients. None of the manufacturers uses a chemical reaction in the manufacturing process.

The pharmaceutical industry uses modern mixing and packaging methods, with equipment in most cases being small but highly flexible. A considerable amount of German equipment is being used, even by U. S. subsidiaries, as available American-made equipment usually is of too high a production volume for Venezuelan market conditions. Standards of hygiene are high and packaging and presentation are equal to world standards. Quality checks are frequently made by the Ministry of Health and each company is required by law to have a quality control laboratory staffed by a chemist or pharmacist. Each product, each form, and each concentration of a product has to be registered with the health authorities before it can be placed on the market, and the Ministry not only considers the chemical consistency but also requires proof (research reports, literature, etc.) of the product's effectiveness.

Retail Pharmaceutical prices have been controlled since 1968. These controls fix a mark-up of 30% to retailers and 14% to wholesalers. The prices are fixed on the basis of information supplied by the manufacturer, taking into consideration the price levels on which similar products are offered on the market. Drug prices are generally lower than in the United States.

Drugs and narcotics control is strict and all drug

handlers are subject to unannounced spot checks and inventory controls by Government inspectors.

Pharmaceutical products are not patentable in Venezuela, only the processes for their manufacture. Trade names can be registered and are protected.

Most of the larger pharmaceutical manufacturers are subsidiaries of foreign firms. Some U. S. companies with plants in Venezuela are Parke-Davis, Schering, Eli Lilly, Abbott, Sydney Ross, Winthrop, Wyeth, and by local licensees. From Europe, Hoechst, Merck, Bayer, Ciba, Hoffman-La-Roche, and Sandoz are some of the better known laboratories. Several locally owned pharmaceutical manufacturers also have reached some importance on the market: Laboratorios Belloso in Maracaibo; Laboratorios Rojas Bravo in Valencia; and Laboratorios Behrens, Quinac, Vita, Palenzona and Mayer Productos Terapeuticos, in Caracas. Behrens is an important producer of snake bite serums. Serums and vaccines for veterinary application are being produced by Laboratorios Asociados in Maracay and by Laboratorio Biologico & de Irradiacion in Caracas.

The period of greatest expansion of the pharmaceutical industry in Venezuela seems to be over, so that export opportunities for U. S. companies exist mainly in equipment for replacement, enlargement, and modernization and in raw materials and semi-finished products. Local manufacture of antibiotics, and of such basic ingredients as salicylic acid, citric acid, hydroxides, vaseline, mineral oil and others has been studied, but probably will not be realized in the foreseeable future due to the small market for each given product.

Surgical dressings and bandaging material also are being manufactured in sufficient quantities to cover the demand. S. C. Johnson & Sons, Laboratorios Vargas, Steritex, and INCA are some of the more important manufacturers of sterilized absorbent cotton, adhesive bandages, and dressings.

Other Chemical Manufactures.—Glues and adhesives are manufactured by a number of Venezuelan firms, among which Couttenye e Hijos, Ahesivos Nacionales, Industrias Leros, and Adhesivos y Gomas Nacionales are the largest. This sector of the industry reportedly formulates several hundred types of adhesives for household and industrial use. Its 1967 production was estimated at 1,200 metric tons. However, close to \$500,000 of glues were imported during 1967.

There is one manufacturer of matches, Fosforera Venezolana C. A., in Caracas. This plant has a labor force of 250 and a capitalization of \$3.3 million. Its output during 1967 amounted to 14.7 billion wax paper matches. A second company was recently established and is scheduled to start operations late in 1970.

Subsidiaries of the Liquid Carbonic Corporation and of the Diversey Corporation, among others, produce flavors and essences for the food and beverage industries, but the greater part of the country's requirements for these products is still being imported.

Pesticides are formulated in Venezuela by a number of companies using imported toxic ingredients. Shell Quimica, Real Kill de Venezuela, Bayer of Germany, Insectidas Mundiales, and Laboratorios Belloso are some of the more important formulators of pesticides. Insect-repellent smoking coils are also being produced by Osiris, Caracol and others. Laboratorios Asociados, in Maracay, is the only producer of worm killers. Resimon, in Valencia, produces certain herbicides.

At least 20 firms prepare household and industrial disinfectants. All of them are formulators. Most of the products are made on the basis of pine oils, phenol, alcohol, creoline, chlorine, or sodium hydroxide (lye). Important firms are Laboratorios Belloso, in Maracaibo, Productos Cruz Verde, Alcopuro, Laboratorio Quimico Industrial Mabo's, and Tecnoquim. The industry uses locally produced alcohol, chlorine, caustic soda, and phenol extracts; it packs its products in metal, glass, or plastic containers of local manufacture.

Pine oil is imported from the United States, Finland, and Canada.

Household bleaches and bleaching agents for the textile and laundry industries are made by Quimicas Caracas, Tempus, and La Princesa, to name the most important manufacturers.

Nalco de Venezuela C. A. formulates water and crude oil treatment compounds. Roofing, waterproofing and anti-resonance compounds are made by Cindu de Venezuela and by Industria de Productos Asfalticos IPA in Caracas. Frenos Hidraulicos de Venezuela S. A. and Creole Petroleum Corporation make hydraulic transmission and brake fluids from locally-produced glycerine and imported additives.

Venezuela has the capacity to produce sufficient quantities of edible and inedible starches and dextrin. Central Yuquera El Pao (Yucca starch) and Alfonzo Rivas & Cia. and Remavenca (both cornstarch) are the most important producers of edible starches. Tempus C. A. and Almidones Industriales Nacionales C. A. produce laundry and textile industry starches. Production during 1967 amounted to 3,485 metric tons. There are still some imports and the industry is asking for further protection.



Iron mines in operation at Cerro Bolivar. Much of the country's iron ore is shipped to users in the United States.

PLASTIC PRODUCTS

Venezuela's plastics industry has undergone extraordinary development during recent years. While in the late fifties the industry consisted of not more than 40 small molders, the number of firms is now estimated at over 200, some of which can be considered large. The importance of the industry is illustrated by the fact that it contributes somewhat over 5% of the total manufacturing industry production. Investment is estimated at \$20 million and employment close to 2,000. The value of production is estimated by various sources to have reached \$40 million, or 80% of total domestic consumption of molded plastic products.

The industry produces consumer goods, household articles, toys, novelties, industrial goods, containers, laminates, artificial leather, and many other items. While most companies have no more than 4 or 5 machines, there are several companies which perform the whole range of extrusion, blow-molding, and injection molding and have 20 or more machines. Most companies are very diversified and manufacture a large variety of articles in order to utilize their equipment fully. The entire supply of basic resins is imported. Total thermoplastic and thermosetting resin imports amounted to 29,863 metric tons in 1965 and to 39,459 metric tons in 1967. Statistics on production by article

are not available. However, the industry has received complete protection by import restrictions in the form of high duties and/or import licensing requirements.

There is little foreign capital in the plastics industry. W. R. Grace operates two plants manufacturing artificial leather for upholstery (especially for automobiles) and decorative laminates and sheets. American Cyanamid produces its "Formica" laminates through a subsidiary. Some of the larger Venezuelan-owned companies are Topoplast (injection and blow-molding), Hojafan and Polyplastic de Venezuela (film extruders), Envases Plasticos Venezolanos (containers), Plasticos Victoria (blow-molding), Ampolven (pharmaceuticals containers), Tubenplast (PVC tubing), and Tupla (PVC (valves and connections)).

In the early stages of the industry, Italian machines were the main ones used because many owners of the small companies were of Italian origin. In recent years, however, a considerable volume of German and U. S. equipment has been imported. Very recently, according to industry sources, German machines seem to have gained preference because of their better delivery terms and prices. However, large and high-speed machines for mass production of certain items apparently still come from the United States. Because the mold-making firms in Venezuela are small and few, there is considerable interest within the industry in importing molds.

Wood, Paper, and Their Products

WOOD PRODUCTS

The production and consumption of forest products in Venezuela is low despite the nation's extensive forest resources, but there is an active Government and industry interest in changing this situation. One of the problems in bringing about efficient exploitation is the fact that Venezuelan forests, in most areas, consist of a mixture of a great many species of trees—of which only a few are of commercial importance—mixed in with thick tropical underbrush.

Other problems which have been cited include complicated Government regulations on exploitation, a scarcity of technical assistance applied to forest cultivation, the relatively small market for lumber, and a shortage of credit for forest and lumber operations. Furthermore, Venezuela's most extensive forest regions are far from populated or industrial areas and therefore lack good highways.

Although there are a number of large and well-run firms in lumber production, most of the firms in the industry are small operations which are inadequately financed, poorly equipped, and lacking in technical know-how. Consequently, there is considerable destruction and loss. Most lumber is air-dried during the dry

seasons, frequently rendering it inadequate for further use except in construction, and consistency of quality is haphazard.

The total value of lumber production during 1967 is given as \$38 million by Government sources. Recent production of lumber is shown in table 14.

Total employment in the lumber industry is estimated at 5,000 to 6,000 workers, mostly seasonal. There are some 110 sawmills. The major consumers of lumber in Venezuela are the construction and furniture industries; other consumers are box makers, plywood and chipboard plants, and small carpentry shops making prefabricated building items, such as doors, window frames, parquetry, and wall paneling. Tablopan is the largest particle board plant and Rafael Viso y Cia., the largest plywood manufacturer.

Imports of lumber are small, as there is an import licensing requirement, and ordinarily licenses are granted only for decorative and expensive woods.

The Government presently is promoting the use of local species such as mangle and divi-divi for the production of tanning extracts. These species are abundant

and it is hoped that sufficient quantities of extracts can be obtained to allow exports.

There is no production of wood pulp in Venezuela. However, the Government is considering, as a joint venture with a number of local paper mills, the construction of a 40,000-ton-per-year pulp mill.

Furniture.—Venezuela's furniture industry has developed to such a degree that it is now able to supply the country's entire requirement of wooden household and office furniture with reasonably priced products of good quality. The industry consists of numerous small enterprises and a few large industrial plants such as AVELCA in Caracas, reportedly the largest furniture manufacturer in South America, VEMATEC, owned jointly by Sears Roebuck de Venezuela and Sear's employees, and Muebles Azpurua. Because of the great number of establishments, there are no reliable statistics on investment and employment. Estimates range around \$60 million in fixed assets, and 20,000 employees. The trend is toward a smaller number of larger plants, but small producers of high-cost, stylish furniture and those making the crudest and lowest-priced furniture will probably always have a market enabling them to exist.

The total value of production of the furniture industry is estimated by the Government at \$90 million, compared to \$79 million during 1965. The industry relies almost entirely on locally grown woods, especially mahogany, cedars, and several tropical species of medium hard woods. Locally produced upholstery material, pile fabrics, springs, paints, and varnishes are used, but much of the hardware is imported.

The industry holds a very popular annual exposition which has helped sales considerably and which has resulted in some exports. High duties protect the industry effectively and imports of wooden furniture are negligible.

Equipment imports were \$3.2 million during 1967, of which the United States supplied roughly 15%. West Germany was the largest supplier. Opportunities for sales to the furniture industry continue to be good, as many small firms are growing and require new and larger equipment.

PAPER AND PAPER PRODUCTS

Venezuela's paper industry has continued its gradual growth and diversification. The industry now consists of 13 primary paper and board mills with a total of 23 Fourdrinier and cylinder machines. Its total capacity is 800 metric tons per day, or 280,000 metric tons

per year (24 hour capacity times 345 days). Pulp imports during 1967 amounted to over 120,000 metric tons. There is one small bagasse pulp mill producing roughly 100 metric tons of pulp per day. The pulp is used for production of kraft.

The industry produces kraft, tissue, lightweight wrapping, bond, mimeograph and ledger papers; chip board and linerboard; and medium, white, and grey-board. Production of various types of paper and board during 1965-1966 is given in table 15. (1967 statistics, not yet available, probably totalled over 190,000 metric tons.)

Some of the largest paper mills in Venezuela are subsidiaries of U. S. firms or joint ventures. These include Container Corporation of America, which operates two board mills under the names Cartones Nacionales S. A., in Valencia, and Carton de Venezuela S. A., in Caracas. The Weyerhaeuser Company has a minority interest in C. A. Venezolana de Pulpa y Papel (VENEPAL) in Moron, the largest Venezuelan paper mill. Other important mills are Fabrica de Papel de Maracay (locally owned) and Papeles Venezolanos S. A. (Kruger Corporation of Canada). The mills are generally well-equipped and well-run. Equipment imports have run close to \$3 million annually for the last few years.

Paper converting is done by a great number of firms, possibly as many as 100. This part of the industry produces stationery, packaging material, kraft sacks for cement and feed, grocery bags, boxes and cartons, wrappers, labels, gummed paper, decals, and napkins. Most of these plants are quite small. Some of the large companies are Papelera Industrial C. A., Shellmar, Manufacturas de Papel C. A. (MANPA), and Cello-Manpa, all in Caracas; Corrugadora de Carton S. A., in Maracaibo (another Container Corporation of America subsidiary); and Dixi Cup de Venezuela C. A., in Maracay (American Can Co.). See table 16 for production of converted paper products.

The demand for paper products is increasing rapidly, in large part because of increasing manufacture of consumer goods and a rising user demand for well-packaged goods and attractively designed packaging. The converting industry, however, frequently lacks capital, good designers, and knowledge of efficient marketing techniques. While the U. S. market for converted paper goods is gradually disappearing, there is a growing market for equipment, and excellent opportunities seem to exist for consulting and for joint ventures.

The future import market for paper will consist primarily of specialty papers, such as security papers, printing papers, and newsprint.

Rubber Manufactures

TIRES AND INNERTUBES

Four companies produce tires and innertubes in Venezuela: Firestone, Goodyear, Uniroyal, and Compañia Nacional Manufacturera de Cauchos y Neumaticos General, a joint venture of General Tire with local capital. These four companies are in a position to cover practically the entire domestic demand for tires, and imports now consist mainly of aircraft and motorcycle tires, bicycle tires, and some off-size tires. The import of all tires is subject to import licensing. Tire and tube production is given in table 17.

The industry's annual capacity for tire production is reported to approach 2 million units. Thus, the industry will be able to absorb further consumption increases without enlargement. Most of the rubber, natural as well as synthetic, is being imported. Tire cord is now made locally. Carbon black is available from United Carbon's plant in Valencia. The tire manufacturers also produce camelback, permitting the numerous tire recappers to purchase their raw material locally.

OTHER RUBBER PRODUCTS

Gates Venezolana S. A., a subsidiary of the Gates Rubber Company, and Goodyear de Venezuela produce V-belts of all common sizes, with Goodyear also producing hose. A number of small, locally-owned companies mold rubber heels and soles, furniture leg tips, foam rubber pillows, rubber floor mats, and other molded rubber products. One manufacturer recently began the production of household and surgical gloves

with an installed capacity of 237 metric tons per year.

The range of rubber products made in Venezuela is becoming wider and more import restrictions can be expected. Again, future U. S. markets seem to consist of equipment, with possibilities existing for licensing or joint ventures.



A heavy duty truck tire being manufactured at Compañia Anonima Firestone Venezolana.

Leather and Leather Goods

TANNING INDUSTRY

Venezuela's tanning industry has developed to such a degree that it is now able to satisfy the country's demands for practically all leather used to make footwear, handbags, travel goods, and small leather articles. Consequently, leather imports now consist of very fine leathers used in the manufacture of luxury goods. Occasional imports of hides are necessary to cover seasonal shortages, but generally the industry is able to obtain sufficient quantities of skins from local slaughterhouses. Greater care is also being taken in cutting the hides off the animals and in avoiding damage caused by parasites, deep branding, and barbed wire, formerly a major problem of the tanning industry. Reptile skins are tanned by several small companies and there have been occasional exports.

The industry imports almost all its tanning extracts. Its equipment comes mainly from Germany and the United States, Germany being the largest supplier. However, equipment imports in recent years have been below \$200,000.

The industry now consists of 28 plants with a total capitalization of \$11 million and a labor force below 2,000. The largest tanneries are Gustavo Zingg & Cia., in Maracaibo, Teneria El Aguila, Vipaq, and Teneria 1 de Octubre, all in Cagua. No foreign capital has been invested in Venezuelan tanneries. Recent production is shown in table 18.

LEATHER GOODS

The footwear industry is protected by high tariffs, and imports are negligible. There are no reliable statistics on the number of shoe manufacturers, their capacity, or production, because of the very high count of small individual shoemakers, especially those producing ladies' shoes. The Ministry of Development estimates that there are over 1,000 footwear manufacturers and that in 1967 they produced over 10 million pairs of all-leather or partly leather shoes. In addition, the industry produced close to 2 million pairs of rubber-soled, canvas-topped shoes plus an unknown quantity of rubber beach sandals, plastic shoes, and similar footwear. Total employment is estimated to be over 12,000.

Some of the largest shoe manufacturers are J. M. Benarroch & Cia., Williams Shoes, Calzados Lucas, and Calfi C. A., all in Caracas. Their products are distributed country-wide and are in the medium- to high-priced range.

Handbags, travel goods, brief cases, wallets, belts, and similar items are made by a number of smaller companies, the largest of which is probably Fabrica Nacional de Articulos de Cuero y Plastico, in Caracas. Again, production statistics are not available.

Stone, Clay, and Glass Products

CEMENT

Venezuela's cement industry consists of seven large, modern plants. Their combined capacity is more than ample for local needs. Products are of sufficiently high quality and low cost that exports during 1967 amounted to 146,370 metric tons, mainly to the West Indies but also to South American countries.

Cement production capacity enlarged rapidly during the 1950's to meet the increasing needs of the Venezuelan construction industry. Cement is used much more extensively than in the United States as a result of the high cost of steel and brick, the requirements of earthquake-proof building codes (which call for reinforced, pre-stressed concrete for most major buildings, the high cost of wood, and the susceptibility of wood to climatic damage and parasites. Cement production amounted to 2,111,816 metric tons in 1965 and 2,278,303 metric tons in 1967.

There is no foreign capital in Venezuelan cement plants. The largest firm, C. A. Venezolana de Cementos, has manufacturing plants in Maracaibo, Barquisimeto, and Pertigalete, and a sacking plant near Caracas. This firm also owns two cement bulk trans-

port ships and has ordered a third. Other important cement producers are C. A. Consolidada de Cementos, with plants in Valencia and Tachira, and Fabrica de Cemento La Vega, in Caracas, which is presently building a second plant at Ocumare Del Tuy.

Refractory cement is produced by a plant in Ciudad Guayana (under technical supervision of Harbison-Walker of the United States) to supply the steel mill at that location. Other smaller plants produce refractory material and vehicles to supply foundries and enameling plants.

Numerous companies produce cement blocks and pre-cast cement building elements. C. A. Concretera Lock Joint Consolidada, in Caracas, is the largest manufacturer of large-diameter concrete tubing. Over 150 companies produce concrete blocks, mosaics, and building elements, as seen below, in thousands of units:

	1965	1966	1967
Blocks and shapes -----	45,532	45,889	44,790
Tubes -----	1,709	1,816	2,063
Mosaics (cement tiles) -----	669,648	644,614	809,154

Source: Ministry of Development Caracas, Venezuela.



This plant at Pertigalete and others like it in Venezuela produce enough cement to meet local consumption.

The cement industry obtains its entire raw material supply locally and uses locally-made sacks. Bulk cement transportation as well as pre-mixing, is becoming more popular, and most larger construction projects use batch plants or contract for the services of one of the several pre-mixing companies.

CLAY AND CERAMICS

There are over 60 brick yards in Venezuela. During 1967 they produced over 144 million bricks, hollow bricks, and roof tiles. Larger yards, such as Bailou & Maggi and INDARAGUA, in Maracay, and INALVENSA, in Barquisimeto, produce specialty shapes and refractory bricks. Most of the yards, however, are quite small and supply only certain regions. Even the larger ones have little mechanization. Clay is available through the country.

The Venezuelan Institute for Technical Research, INVESTI, a non-profit organization sponsored by Government and industry, has a continuing research project related to clay and ceramic manufacturing. Part of the project concerns the determination of the availability of certain clays throughout the country for preparation of light-weight aggregates for the construction of

low-cost housing. Another part concerns the availability of clays for ceramic manufacturing.

The three largest ceramics plants are Ceramica Carabobo S. A., in Valencia, and Sanitarios Maracay S. A. and Venezolana de Ceramica S. A., both near Maracay. These companies, which have a combined capitalization of close to \$10 million and a combined work force of 1,000, supply the country's needs for bathroom fixtures and wall tiles. There are no statistics on the output of these plants, but there are practically no imports and the industry is protected by high tariffs.

There is no domestic production of porcelain tableware. Traditional earthenware cooking and eating utensils are still popular and are being produced by a number of small, artisan-type enterprises.

Sales opportunities for U. S. companies seem to exist in mechanical equipment for brickyards, but the ceramics plants reportedly have modern plants which will be able to absorb future market increases.

GLASS INDUSTRY

Venezuela's glass industry has had a somewhat late start. The first bottle plant was established in 1956. Early attempts to manufacture flat glass failed. In

recent years, however, the industry has developed satisfactorily and now is able to supply the country's requirements for containers, most flat glass, and safety glass. In addition, decorative and artistic glass articles, glass tableware, and mirrors are being produced. Two companies grind optical glass to specification.

The industry now consists of 13 glass plants and numerous small converters (mirror cutters, partition makers, etc.). The largest plants are those of Productos de Vidrio C. A. (formerly Fabrica Nacional de Vidrio C. A.), in Cagua, which is locally owned, and Owens Illinois de Venezuela C. A., near Valencia, a fully-owned subsidiary of the U. S. firm. These two companies are the largest bottle makers in Venezuela, with the U. S. firm also producing perfume containers, marmalade jars, and similar containers. Centro Vidriero de Venezuela S. A., in Guarenas, is a medium-sized manufacturer of partition and wire-reinforced glass, and also makes demi-johns. Ampoules and small medicine containers are blown by Ampolven C. A. and Envases Generales de Laboratorios C. A., both near Caracas, and both locally owned. Flat glass is made by Inveca-Pittsburgh, in Tejerias, which, together with Templex C. A., also produces automobile and construction safety glass. Manufacturers de Vidrios Planos C. A., recently purchased by Owens Illinois de Venezuela, is the largest window glass producer. Household glass-

ware is made by VIDOSA, in Tejerias. Artistic glassware is made by ICET Arte Murano and by Cristal-eria Araya, both in Caracas. The industry has a total capitalization of \$20 million, and close to 2,000 employees. No production figures are available, but estimates range around 70,000 metric tons per year.

The glass industry uses local sand, but has to import most other required raw materials.

MISCELLANEOUS STONE PRODUCTS

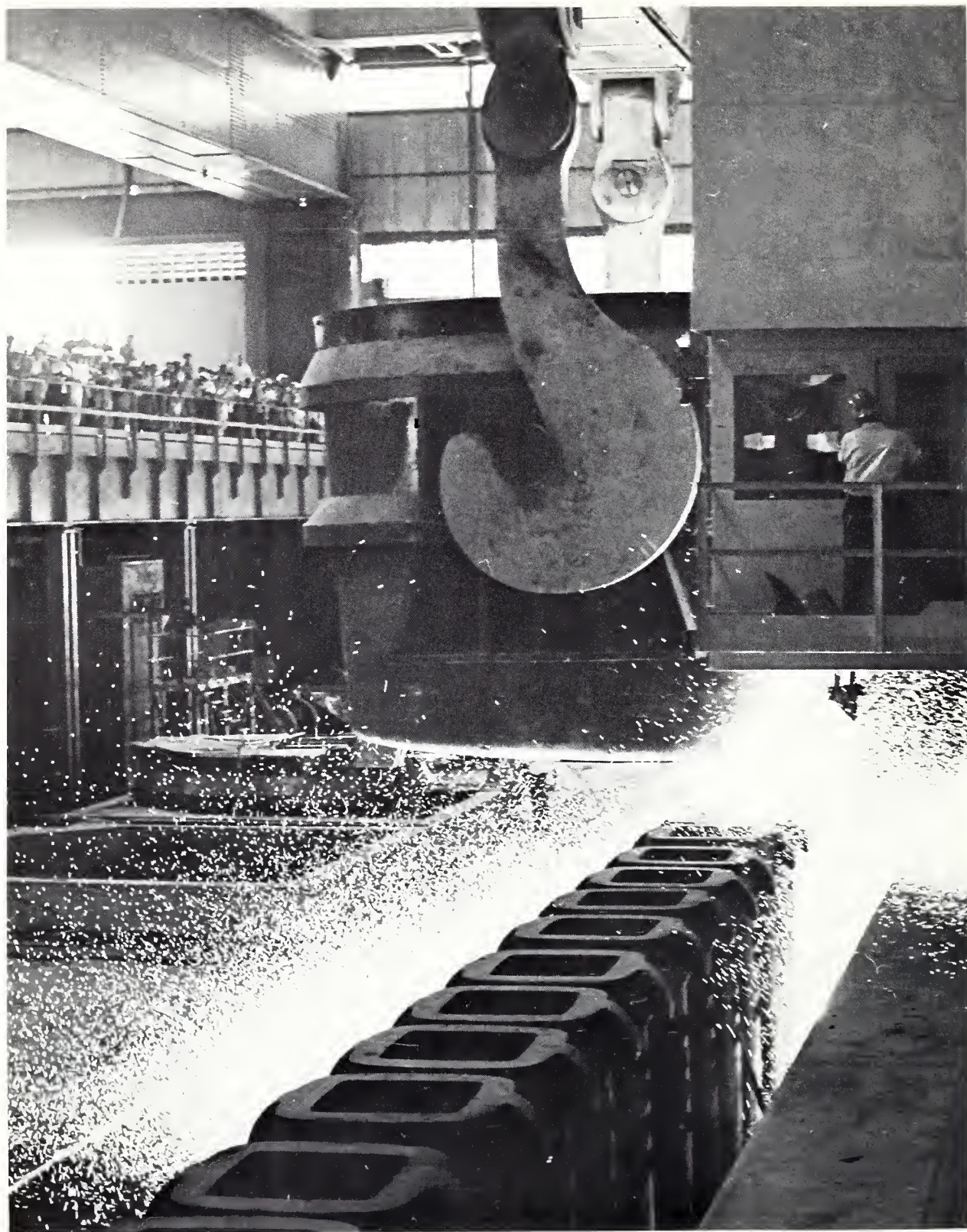
Venezuela has rich deposits of marble, which have spurred the installation of a number of cutting and polishing works. About 10 companies produce polished marble slabs, flooring, tile, and decorative marble articles such as lamp bases, table tops, and paper weights.

Fibras Aislantes S. A., a subsidiary of the Johns Manville Corporation, produces rock and glass wool in its plant in La Victoria. The firm is able to supply almost the entire local demand for heat and noise insulation material, selling especially to kitchen range and refrigerator manufacturers.

Quarrying of basalt and granite is done throughout the country. With the popularity of terrazzo flooring, granite split has a ready market.



Limestone is being loaded at Barquisimento Quarry for use in Venezuelan cement production.



Venezuela's large reserves of high-grade iron ore should encourage continued expansion of steel production.

Metal Products

PRIMARY METAL PRODUCTS

The vast known reserves of iron ore, coupled with ample sources of power, form the basis for an expanding iron and steel industry in Venezuela. The iron ore deposits, of which more than two-thirds have a purity of over 60%, are located primarily in Bolivar State, principally around the Cerro Bolivar, San Isidro, and other mountains. The ore is strip mined from the mountains and transported by rail to Ciudad Guayana (the city formed from Puerto Ordaz, San Felix, and Matanzas) to be used there in the steel mill or to be exported from the deepwater port on the Orinoco River. The two principal mining companies are the Orinoco Mining Company (a subsidiary of U. S. Steel) and Iron Mines Company of Venezuela (a subsidiary of Bethlehem Steel). Iron ore production amounted to 15,502,396 metric tons in 1968. Exports were 15,034,904 metric tons, mostly to the United States (70%), and West Germany, England, and Italy.

Venezuela has two primary steel mills, Siderurgica del Orinoco, C. A. (SIDOR) and Siderurgica Venezolana S. A. (SIVENSA). SIDOR, in Ciudad Guayana, is a large Government-owned, integrated steel mill producing pig iron, ingots, blooms, billets, slabs, seamless

pipe, structurals, rod and wire. The mill processes Venezuelan ore but has to import coke and coal. SIDOR's production during the last 4 years is listed in table 19.

The mill was originally designed to produce 300,000 metric tons per year of seamless steel tubing. The market, however, was never this great and the mill for many years operated at a loss, until it was able to put other products on the market. The construction of a new flat products mill is planned, and it is scheduled to commence operation by 1972. This new mill is to have a capacity of 385,000 metric tons per year. The basic steel mill was to have a capacity of 1 million tons by early 1970.

The other basic steel mill, (SIVENSA) in Caracas, is a privately-owned mill equipped with two Siemens-Martin furnaces and with a built-in capacity of about 120,000 metric tons per year. The mill has produced roughly 110,000 metric tons of reinforcing rods, wire rods, and flats per year during the last few years. The mill uses scrap metal as raw material.

Reinforcing rods from purchased steel are made by Heliacero de Venezuela C. A. and by SIMETACA, both near Caracas. Siderurgica del Occidente C. A. (SIDER-

OCCA), in Maracaibo, produces about 25,000 tons of tubing per year, also from purchased steel.

Conduit tubing and welded tubing from imported strip is made by a number of companies, and imports are negligible. The most important manufacturers are C. A. Conduven, in La Victoria, Tubo-Teide, in Los Teques, and COVENAL, in Mariara.

Oiram C. A., Vicson, and Industrias Fabrenca C. A. are the largest producers of nails. Venezuelan annual production of nails approaches 7,000 metric tons. Wire mesh, cyclone, and other fencing is being manufactured from locally purchased galvanized and barbed wire by a number of companies, of which Mallas Soldadas S. A., Oiram, Fabrenca, and Oddrycca are some of the major ones. FANAMEC manufactures expanded metal.

Flat and corrugated galvanized steel sheeting is made by LAMIGAL C. A. in Valencia. This plant, using the hot pickle method, produces about 28,000 metric tons per year of galvanized sheet. Bolts, screws, and nuts are now being made by three plants which had an output of 3,500 tons of fasteners in 1967. The largest of the manufacturers is Tornillos Venezolanos C. A. (a subsidiary of the Russell, Burdsall & Ward Bolt & Nut Company), in La Victoria, which has 230 employees and a total investment of about \$5 million, and produces 9,000 types of screws, transmission line hardware, and automotive fasteners.

Venezuela is now almost self-sufficient in the production of aluminum. Aluminio del Caroni S. A., ALCASA, a joint venture between the Venezuelan Government and Reynolds Aluminum, produces 10,000 metric tons of aluminum ingots from imported alumina in its reduction plant at Ciudad Guayana and plans to increase its capacity to over 20,000 tons a year. The plant also produces laminates, structurals, and foil. The largest converter is COVENAL, at Mariara, a joint venture of Montecatini and local capital, which extrudes tubing, structurals, and shapes at a rate of somewhat over 1,500 metric tons per year. Another extruder and foil producer is Aluminio Nacional S. A., in Maracaibo, also owned by Reynolds.

Extruded copper products recently were placed under import licensing requirement. There are a number of small plants making copper tubing, connections, expansion joints, and similar basic copper products, the largest being Vencobre C. A., in Caracas.

FOUNDRY PRODUCTS

The Venezuelan foundry industry generally has not been able to keep up with the development of other sections of the metal industry, and there is a considera-

ble shortage of efficient foundry capacity. A number of small foundries work with very little mechanization and produce grills, manhole covers, valve connections, elbows, plaques, some machinery spare parts, and other rather simple items made of cast iron, steel, bronze, aluminum, and copper. Probably the largest foundry, which incidentally has a very well-equipped machine shop, is Talleres y Fundicion Catia C. A., in Caracas. Since all foundries work on an order basis, no estimates as to their annual production can be made.

METAL CONTAINERS

Venezuela is self-sufficient in the manufacture of metal cans and containers. There are 14 plants, which in 1967 produced 48,835 metric tons of cans, drums, and containers. The two largest producers are probably Envases Venezolanos S. A. (a subsidiary of the American Can Company), with two plants, and Dominguez & Cia. S. A. (operating under a technical aid contract with Continental Can Company), with three plants. Venezolana Van Leer S. A., in Punto Fijo, is the most important manufacturer of oil drums. Square cans for oil and lard are made by, among others, IPICA, in Caracas (a subsidiary of Juan Ernesto Branger y Cia., an edible oil producer). Crown caps also are manufactured in sufficient quantities by Tapas Corona C. A., in Caracas, and by Industrial Metalgrafica C. A., in Valencia. The industry has a total capitalization of over \$25 million, and about 3,000 employees. No raw material is available locally and the industry imports all tinplate and cork. The industry has high-speed, modern machinery of U. S. origin and modern metal lithography equipment. (Locally produced printing inks are used.)

METAL FABRICATING

Fabricating of structures, vessels, towers, and simple machines had an early start in Venezuela. Because of the small market, metal fabricators have had to be highly diversified. They have now reached a considerable degree of efficiency. The industry consists of at least 30 larger shops and numerous small enterprises with only a few employees. Some of the fabricators have converted to the manufacture of white line appliances (see below) and others to automobile parts, but most of them still operate on the basis of orders and contracts. Among the more common products are bridges, roof trusses, water towers, storage tanks, scaffolding, stairs, silos, pre-fabricated building parts such as window and door frames, highway safety rails, cul-



Venezuela has two basic steel mills, one of which is Government owned, and the other privately owned.

verts, transmission towers, antenna towers, and similar items put together from sheet and structurals. Some of the larger companies are Industrias Van Dam C. A., with plants in Caracas and La Victoria, Talleres Puerto Cabello C. A., in Puerto Cabello, and Talleres Cuni Campalans C. A. and Talleres Hispania S. A., both in Caracas. It is estimated that this sector of the metal industry employs over 4,000 people. The industry is equipped with basic metalworking machinery, such as lathes, power brakes, drills, welding equipment, and similar equipment which can be applied for many types of processes.

METAL FURNITURE

Venezuela now produces all types of metal furniture, and imports consist of some specialty items such as data processing furniture, complicated operating tables or patented special filing systems. There are 32 plants. In addition to the general metal office furniture, the industry manufactures pantry and garden furniture, bathroom cabinets, kitchen cabinets, and work tables and benches for industry, including the stainless steel fixtures for the above items. Appliance manufacture will be described below. The industry is estimated to have a total investment of over \$12 million, and over 2,000 employees. Like many other industries, it is protected by high tariffs.

The furniture industry uses imported sheet steel, rails, casters, rollers, and hardware, but buys paints, phosphatizing compounds, and other supplies locally. Recent production of selected items is shown in table 20.

Some of the larger manufacturers are Manufacturas San-Roy, ZAID, Manex and Industrial Metalurgica Nacional C. A. La Vasconia is the largest manufacturer of hospital furniture, while numerous firms such as Metalurgica Rokel, Industrias Prosperity, and Industrias Sabal produce metal furniture for home and institutional kitchens.

WIRES AND CABLES

Venezuelan cable mills manufacture a great variety of electric conductors. The country no longer imports low-voltage and control wires, telephone cables, high voltage cables up to 68 KV, armored and undersea cables, antenna cables, coaxial cables, elevator cables, or magnetic and enameled wire. Mainly copper, but also some aluminum conductors are made. While plastics, rubber compounds, and insulating papers are imported, the industry uses locally produced carbon black, aluminum and copper rod, asphalt, paraffin, cotton, and calcium carbonate. Reels and packaging materials are also of local production. No production statistics are available. The industry consists of three

large and two small companies with a total capitalization of over \$10 million, and close to 1,000 employees. The three large cable mills are Alambres y Cables Venezolanos (ALCAVE), in Maracay, a subsidiary of Phelps Dodge International; Industria Venezolana de Cables Electricos (CABEL), in Valencia, a joint venture between local capital, the General Tire and Rubber Company, General Cable Corporation and CEAT of Italy; and Industria de Condutores Electricos (ICONEL), a subsidiary of Canada Wire & Cable Company.

MISCELLANEOUS METAL PRODUCTS

India C. A., in Maracay, a subsidiary of the True Temper Corporation, is the only major Venezuelan manufacturer of simple tools, such as machetes, picks, pitchforks, and shovels. Some hardware items, mainly brass plumbing fixtures, are made by INAF (Industria Nacional Articulos de Ferreteria C. A.), in Cagua. Yale

de Venezuela C. A. shortly will begin making door locks. Storage cylinders for gases are made by Tanques Para Gas C. A., near Caracas. Ace Fastener de Venezuela C. A. and Clips C. A. produce paper clips and staples. Gillette de Venezuela C. A. and Plantas y Factorias S. A. (Schick) manufacture razor blades. Cromalloy C. A. is a die and injection caster of refrigerator hardware.

Kitchen utensils of aluminum are made by several small manufacturers, primarily by IVA and Envases Nacionales de Aluminio, both in Caracas.

There are numerous small companies making venetian blinds, rolling doors, window frames, wire products such as baskets, supermarket shopping carts, chicken cages, and similar simple items. No-Sag Spring de Venezuela S. A. produces coil springs and Fenix S. A. (a subsidiary of the Simmons Company) makes springs, seating, and bedspring frames. The number of metal products manufactured is increasing constantly. The products mentioned above indicate the status and available technology of the industry.

Machinery and Transport Equipment

MACHINERY

Construction of machinery is rather recent in Venezuela. The types of machines made are generally limited to those which can be fabricated from semi-finished parts which require little machining. For instance, Industria Mecanica Orion S. A. (IMOSA), in Puerto Cabello, produces cement mixers, batch plants, asphalt mixers, conveyors, stone crushers, and similar equipment for the construction industry in addition to large valves, sluice gates, and irrigation equipment. Piccini de Venezuela recently started the manufacture of similar items. Industrias Van Dam builds boilers in its plant in La Victoria. Manufacturas Gleason S. A. manufactures conveyor systems under license by a U. S. firm. Freight elevators of simple design are being constructed by the same company and by Elevador C. A., in Caracas.

Several small companies, the largest of which is probably Metalaire C. A., manufacture ventilators, exhaust systems, and dust collectors.

Water pump manufacture is recent in Venezuela. It was started by Manufacturas Hidro-Mecanicas S. A., in Maracaibo. The largest Venezuelan manufacturer is Industrias Fairbanks Morse de Venezuela S. A., a subsid-

iary of Colt Industries, producing water and deepwell pumps in its new plant near Maracay. With two more projects having been registered, the Venezuelan Government has passed import restrictions on water pumps, allowing only those pump types to be imported which are not being made in the country.

Two very small shops produce a limited line of packaging machines, primarily for filling paper and cellophane bags.

Venezuelan manufacture of agricultural machinery is limited to small-scale production of simple equipment such as plows, harrows, and seeders. A few very small shops are engaged in the manufacture of these items, usually on an order basis, and there seems to be no mass production. More complicated equipment, such as tractors, combines and different types of harvesters, grain dryers, and barnyard equipment most certainly will continue to be imported. Policy statements by high Government officials reflect their belief that mechanization of local agriculture must be encouraged. Maintenance of agricultural equipment prices at low levels has been given priority over establishment of local production of the equipment. For example, at-

tempts to assemble tractors have been discouraged as too costly. In fact, the Government has given financial assistance to farmers' groups for carrying out direct imports of tractors and equipment. By purchasing directly from manufacturers or exporters, these cooperatives hope to obtain lower prices. This has not really worked out well in the past, because maintenance and parts in some cases were not readily available and during the last 2 years no such direct imports have been made. Barter deals of produce for machinery ran into the same difficulties, and some of the Polish tractors obtained a few years ago in exchange for rice found no takers.

Venezuelan machinery manufacture is of course limited by the small market, and by the high cost of production resulting from the necessity of having to import most components. The scarcity of skilled labor also is a contributing factor. It is generally believed that the machinery industry will be quite small for many years.

TRANSPORT EQUIPMENT

Cicloven C. A., a subsidiary of COVENAL, in Maricao, is the only manufacturer of bicycles. The company has an investment of \$250,000, and produces over 45,000 bicycles per year for men, women, and children.

A number of small shops manufacture push carts, industrial carts, wheel barrows, and similar small transport equipment.

In line with its industrialization policy, the Venezuelan Government decided to eliminate commercial importation of assembled automobiles after March 1963. As a consequence, several assembly plants, in addition to the two existing ones, were established. At present, there are 11 plants assembling automobiles plus two plants assembling only trucks. The most important companies present are General Motors, Chrysler Corporation, Ford Motor Company, Willy's, Mack Trucks, International Harvester, and American Motors, all of the United States; FIAT and OM trucks, from Italy; Mercedes-Benz and Volkswagen, of Germany; Renault, of France; Nissan and Toyota, of Japan; and Rootes "Jeep" models, 67 truck models, 15 bus chassis models, and 34 passenger car models.

Volume of assembly as shown in table 21, has risen considerably from 1960's total assembly of 10,334 units.

One small company designs and builds Formula 3 racing cars and has been able to place a few on the market, while another shop is building an open 4-place "buggy" which is becoming quite popular and has found many users among youths.

Prices of locally assembled vehicles are very high, which has caused concern in the public and in Government circles. The basic reasons are the high number of models in relation to the low unit quantity being assembled, the high price of local components due to the difficulties in standardization of parts, plus some other, non-industrial factors. While it has been Government policy to force the assembly industry to incorporate an increasing volume of locally produced parts, recent remarks made during interviews of Government officials seem to indicate that some revision of this policy is being studied. The solution of allowing only a much smaller number of models to be assembled is not considered acceptable, since it would signify a step backwards.

For 1969, the volume of parts to be incorporated has been set at 38.5% of total weight for automobiles; 36% for jeeps; 39% for trucks up to 4,000 kilograms; 27.5% for trucks over 4,000 kilograms; and 22% for bus chassis. The list of locally made parts and components, while relatively long, consists mainly of "hang-on" parts. This list is, of course, limited, and in the future the parts industry will be forced to supply items which require a considerably higher investment in machinery and more advanced technology. Again, with the low volume of consumption and the great variety of types to be made, the cost price for each individual component will be higher. The whole problem is under intense study by all circles but at this time the outcome is unclear.

By law, the assemblers have not been permitted to establish parts and components factories. This has caused a great number of new plants to be built and existing metalworking shops to enter into production of automotive parts. The list of items being made in 1969 indicates the stage of development of the components industry: greases and oils; paints; solvents; welding electrodes; upholstery material; carpets; seating; brake fluids; tires; safety glass; batteries; generators; alternators; starter motors; wires and cables; radiators; shock absorbers; brake linings; clutch discs; exhaust pipes and mufflers; voltage regulators; points; spark plugs; ventilators; wheels; hub caps; bumpers; chrome trim; rubber moldings; coil and leaf springs; fuel tanks; oil, air and gas filters; horns; rearview mirrors; luggage racks; brackets; supports; holders; plastic parts; and tools.

The parts industry is reported to consist of 235 companies with a total employment of close to 10,000 and a total investment of over \$60 million. However, many of these companies also manufacture other products. Very little U. S. capital has been invested in parts

manufacture. Most U. S. brands are made by licensees. Some of the U. S. subsidiaries in this industry are: Gates Venezolana S. A., V-belts, (Gates Rubber Co.); the four tire companies, mentioned in Chapter VII; Purolator de Venezuela C. A., filters, (Purolator Products Corp.); Venelec C. A., ignition parts, (Roblin Manufacturing Co.); Corporacion Venezolana de Acumuladores S. A., batteries, (Prestolite); and Bujias Champion C. A., spark plugs (Champion). There are a number of joint ventures with minority U. S. interests.

Seven companies manufacture storage batteries and their production rose from 405,628 units in 1965 to 464,776 in 1967. The firms use imported lead, stoppers, terminals, and separators. The mass, boxes, and acids are of local manufacture.

Possibilities for U. S. companies to invest in the automotive parts industry, and sales opportunities for the required machinery and semi-finished products, appear to be excellent. There most certainly will be further expansion, although it should be expected that the tendency will be towards larger and more diversified companies. Therefore, high-volume production machinery will not be as interesting to local manufacturers as flexible machinery which can be utilized to make many different articles.

Venezuela is now self-sufficient in the construction of bodies and superstructures for trucks and buses. Imports consist of such specialties as fire trucks, ambulances, cement mixing trucks, and trucks with scissor or telescopic booms for overhead work. The builders of truck bodies, using locally assembled chassis, produce refrigerated bodies, flatbed trailers, vans, and other body types. Some of the more important body makers are Talleres Gago, Sotelo y Arino, and Talleres Puerto Cabello. Talleres Puerto Cabello and Talleres Hispana also fabricate tanks for petroleum products and stainless steel tanks for beer or milk transportation.

Some of the more important bus body manufacturers, in addition to Gago and Sotelo & Arino, are ENECA (Blue Bird), in Valencia, Ensamblaje Superior, in Caracas, and Carrocieras Titan, also near Caracas. These assemblers fabricate a considerable variety of bus bodies and claim to be able to supply the domestic market. However, 2 years ago 300 buses were imported from Brazil to be used in the Caracas metropolitan transport system and the city has announced that more will have to be imported. This has caused quite a controversy but it seems that one of the reasons for having to import is the relatively low capacity (roughly 50 per month) of the assemblers. Mercedes-Benz, of Germany, presently is building a plant near

Barcelona to manufacture trucks and buses and this new plant will increase the available capacity considerably.

Two small companies manufacture fiberglass bodies for sports and racing cars.

SHIPBUILDING

The construction of ships in Venezuela is limited to small coastal and fishing vessels, work boats for the petroleum industry, and small pleasure craft. The only large installation is the dry dock in Puerto Cabello, owned by the Navy and able to repair ships up to 35,000 tons. The dock measures 760 feet in length, 105 feet in width, and 36 feet over the blocks. Barges up to 700 tons can be repaired by Diques de Maracaibo C. A., while the Creole Petroleum Corporation maintains facilities at La Salina, near Maracaibo, for the construction and repair of its work boats and personnel carriers. This installation also has constructed floating derricks.

Small boats with metal or wooden hulls are constructed by Fabrica Venezolana de Lanchas and by Nautiven. Fiberglass boats are made by several small shops around Caracas.

Several small shipyards around Maracaibo, Puerto Cabello, La Guaira, and along the Orinoco River repair small coastal vessels and pleasure craft.



A factory at Zulia turns out small boats such as these.

Appliances

Venezuela is self-sufficient in the manufacture of household and commercial refrigerators, and import licenses are granted only for large refrigerator-freezer combinations, freezer chests, and for refrigerators for built-in kitchens. Total installed capacity is over 120,000 units per year, while sales during 1968 were estimated at close to 80,000 units. Most well-known U. S. brands of refrigerators are manufactured by licensees or by local subsidiaries of the U. S. manufacturers. The industry has about 1,500 employees. Venezuelan manufacture of refrigerators is a combination of manufacturing and assembly. While the sheet metal shell, plastic door liners, and some of the trim are made locally, the industry must import compressors, controls, and hardware. Some of the major manufacturers are Industrias Gevensa, in Valencia (General Electric); SIADCA, in La Trinidad (Admiral); Empresas Incorporadas S. A., in Maracaibo (Norge); INSA, in Valencia (Westinghouse); and Basol C. A., in Caracas (Kelvinator).

Commercial refrigeration equipment, display consoles, soda fountain bars, and similar equipment are made by a number of smaller operators, the largest of which are Industrias Sabal S. A. (Tyler) and Mercantil Federal C. A. (Federal), in Caracas; and Venezolana de Refrigeracion C. A. (Articold), in Valencia.

Tecnica de Refrigeracion Industrial, in Caracas, produces stainless steel refrigerators for hospitals. Total annual production of supermarket-type display consoles is estimated at over 3,000 units.

Cold storage units of many sizes are built by numerous small shops which design, construct, and install them according to the wishes of the customer. All these companies utilize imported compressor units.

Cooking appliances are made by a number of enterprises, satisfying the domestic demand for most gas and kerosene ranges and for commercial and institutional ranges. Yearly output is estimated at over 100,000 units, not counting table-top kerosene cookers which are very popular in the interior and among the shanty population. A number of well-known U. S. brands are being produced, such as Tappan, Caloric, and Dixie. Venezolana de Esmaltes C. A., near Caracas, INSA, in Valencia, CORESMALT, in Caracas, and Industrias Prosperity S. A. are some of the more important manufacturers of U. S. cooking appliances. Basol C. A. manufactures an Italian model of kitchen range. The industry imports burners, controls, and sheet metal. Water coolers are made by Manufacturera de Aparatos domesticos S. A., MADOSA, which also makes gas water heaters. Electric water heaters are manufactured by three companies.

Electric Equipment

Venezuela's manufacturers of electric equipment are basically assemblers, using imported components. Mass production is done only by the manufacturers of light bulbs (Industrias Gevensa), fluorescent tubes (Philips, in Maracay), and some of the automotive lines. Several relatively small shops, such as Panelmaster, in Caracas, Danubio, in Maturin, Siemens Venezolana, in Caracas, and Westinghouse, in Maracaibo, assemble control panels and motor control centers. Some household wiring articles, such as fuse boxes, switches, knife switches, outlets, cartridge-type fuses, and other simple items are made by a number of small manufacturers in Caracas, Maracay, and Maracaibo.

Westinghouse, in its Maracaibo plant, recently started assembly of some standard models of distribution transformers. Small transformers are made by several very small enterprises, most of them originally transformer and coil rewinding shops.

Some simple standard items of transmission line

hardware are manufactured by Bermudez Industria Electro-Metalurgica C. A. (BIEMCA) and by Metalurgica Electro-Industrial C. A. (MEICA), the first in Valencia and the second in Caracas. More complicated hardware items are imported, primarily from the United States.

Lamps and lighting fixtures are made by several firms, the largest ones being Century and Lamp-O-Lux. This industry manufactures domestic lighting fixtures from imported components, as well as industrial and street lighting systems. Illumination of highways, stadiums, and parks is effected by lighting fixtures made in Venezuela. The mercury vapor bulbs are imported, however.

Ray-O-Vac International and Union Carbide de Venezuela are the only two domestic manufacturers of dry cell batteries. Their combined output is estimated at 5 million units per year.

Electronic Equipment

Venezuela now produces a considerable variety and volume of electronic equipment for home entertainment. The first assembler was established around 1962. Since then, the number of assemblers has increased to 23, and many internationally-known brands of TV sets, radios, and radio-phonograph combinations are now being assembled in the country. While assembly was initially done from kits supplied by the foreign manufacturers, production of sub-assemblies and some components gradually began. The assemblers now usually import their components in "bulk", buying some parts locally and doing all the wiring themselves.

The industry early in its development received protection against imports and has been able to increase its production considerably (see table 22.)

It is estimated that Venezuela has 750,000 TV receivers and 2,500,000 radios, including miniature transistor sets.

The built-in capacity of the industry is considerably higher than its output. Assemblers and component manufacturers are estimated to have capacity as shown in table 23, based on one 8-hour shift at present employment.

The following components or accessories are now

being made: TV picture tubes, new and rebuilt; vertical, audio, choke, power, and flyback transformers; yokes; channel selectors or tuners; potentiometers; printed circuits; loudspeakers; chassis; IF and RF coils; dials and ferrite antennas; and TV antennas. Wires and cables (magnetic, low and high voltage, control, coaxial, and TV antenna) are also of local production.

Total investment is estimated at \$10 million and total employment has passed 600. Major companies are Industrias Gevensa (General Electric); SIADCA (Admiral licensee); Venolanda (Philips); Curacao Trading Company (Philco); Sylvania Venezolana (also producing TV picture tubes in addition to Venolanda); and Industria Nacional Electronica S. A. (Singer, Fisher, Majestic, and other brands). Total annual value of production is estimated to have reached \$25 million.

Venezuela is likely to begin color television broadcasting within the next few years. As a result there will be a considerable import market for broadcast, reception, and testing equipment and parts, as well as for related manufacturing equipment. New manufacturing investment opportunities will also arise.

Printing and Publishing

The printing industry of Venezuela had a slow development until the middle 1950's when an entirely new phase of its operation began. Rapidly developing new manufacturing industries demanded packaging material, advertising material, business forms, and many other printed goods previously imported. The graphic arts industry has profited greatly from this trend, and has had an annual production increase of over 30%. Imports of equipment have been close to \$5 million annually during the last few years and total investment has passed the \$100 million mark. The industry now includes some printing plants which are large by any standard, well-equipped, and very efficient.

The industry has close to 8,000 employees. Over 800 printers are registered but their actual number is thought to be over 1,000. This would include many small job printers, however. Some of the larger printers are Union Grafica C. A., at Maracay, a subsidiary of the Container Corporation of America; Montana Grafica C. A., in Caracas; Impresora Tecnica C. A., in

Caracas, specializing in business forms, and Cromotip C. A., a four-color printer. Data processing cards are made by McBee de Venezuela C. A. and other, smaller companies.

The publishing business has developed under the stimulus of rapid population growth and an intensive anti-illiteracy campaign. Roughly 350 publications appear regularly, and there are 34 daily newspapers. The number of magazines, house organs, children's publications, and professional magazines is increasing steadily. The country consumes over 58,000 metric tons annually of newsprint, while imports of other printing papers are decreasing due to more diversified local production.

The market for printing equipment should remain good as more printing establishments will be forced to enlarge and to modernize. Book printing and collating equipment should find a good market, as most books published in Venezuela are still printed abroad.

Miscellaneous Manufacturing

Numerous small, artisan-type shops make silver, gold and costume jewelry. Cutting of diamonds and other precious stones is done on a small scale. By far most precious metal jewelry produced is of 18-carat gold. Diamonds are about the only precious stones found in Venezuela. Annual findings average around 80,000 carats. Pearls are obtained from the sea off Margarita Island.

There are about 20 toy manufacturers, not counting plastics molders. They produce stuffed animals, dolls, building-block toys, wooden and plastic toys, and games. The industry is protected by high duties on imports, but these do not affect mechanical and electrical toys not made in the country.

Paint brushes are made by five companies. Several small manufacturers produce straw brooms.

There are three zipper manufacturers and zippers are no longer being imported.

Toothpicks, plastic and wooden, are made by three firms with a total installed capacity of 3,900,000 boxes.

Two companies, Eberhard Faber de Venezuela and

Eagle Pencil Company of Venezuela, both subsidiaries of U. S. companies, manufacture lead pencils. These, along with Gillette de Venezuela and a Venezuelan-owned firm, Plumas de Venezuela S. A., also make ballpoint pens. Filing supplies, typewriter ribbons, stencils, and carbon paper are produced by several companies and imports are negligible. Pressure-sensitive tape is made by Minnesota 3M de Venezuela S. A., a subsidiary of the Minnesota Mining and Manufacturing Company, and by Celoven C. A., a locally-owned company.

A number of small enterprises, usually operating only seasonally and usually working as general merchandise importers, specialize in the manufacture of Christmas and carnival decorations, party decorations, paper hats, and similar items.

Hats of felt and straw are made by a company in La Victoria named Fabrica de Sombreros La Victoria S. A., and by cottage industries, especially on Margarita Island.

Phonograph records are made by about a dozen



Macagua Dam, near the confluence of the Caroni and Orinoco Rivers, provides power for an electric plant at the new city of Santo Tomé de Guayana and the Orinoco Steel Plant.

companies, pressing records from imported matrices or tapes. Many well-known international brands are produced locally under license. However, local recording is done on an increasing scale. The industry uses locally produced plastic. High import duties and an import licensing requirement effectively protect the industry.

The most commonly used types of abrasive wheels, stones, and sandpaper are made by Abrasivos C. A., Abrasivos Nacionales S. A., Esmeriles Nacionales S. A., and Minnesota 3M de Venezuela S. A. This indus-

try also has received protection against competition from imports.

Sporting goods, especially sports clothing, baseball gloves, chest protectors, diving goggles, swim flippers, and other small items, are made locally by several very small manufacturers. Imports of all types of sporting and athletic goods have remained high, however.

Spectacle mounts are made by three small manufacturers who claim that they can supply the market and have received protection.

Service Industries

ADVERTISING

Venezuela's advertising industry is highly developed. It is organized along American lines and uses American methods. Many well-known U. S. advertising agencies have branches in the country.

The industry uses the same media as in the United States and performs similar services including house-to-house campaigns, design of packaging material, and placement of outdoor advertising material. Direct mail advertising is done on a far smaller scale.

Outdoor advertising companies generally have well-equipped shops to produce billboards, metal and plastic advertising signs, and neon signs. VEPACO in Caracas is probably the largest of these firms.

The industry is estimated to have over 3,000 employees. The appearance of numerous new products replacing imported goods, increasing competition and improving awareness among the buying public have stimulated the development of the advertising industry.

AERONAUTICAL EQUIPMENT SERVICING

The three major Venezuelan airlines, VIASA, AV-ENSA and LAV, operate their own maintenance facilities.

LAV also operates a shop for the overhaul of internal combustion and turbo-prop engines. Small aircraft maintenance is handled by a few independent shops in Caracas. Efficient helicopter service facilities. LAV also operates a shop for the overhaul of internal combustion and turbo-prop engines. Small aircraft maintenance is handled by a few independent shops in Caracas. Efficient helicopter service facilities are located at Maiquetia International Airport. Airframe and instrument repair and overhaul is not done in Venezuela. Electronic equipment, except radar, can be repaired by independent shops in Caracas.

AUTOMOTIVE SERVICING

Service facilities for automotive vehicles are generally adequate in Venezuela. There are uncounted shops and garages, most of them with no more than 10 employees. Diagnostic centers are just appearing but have not yet become popular. Reconstruction of engines can be handled by several companies, the largest of which probably is Ingenieria de Combustion C. A. in Caracas. Reconstructed parts are not very popular in Venezuela.

The price is usually so high that customers prefer to install a new part.

Maintenance of heavy construction equipment is ordinarily handled by the users, although General Electric de Venezuela has several well-equipped plants for the complete overhaul of heavy equipment. Tractors are usually repaired by their distributors.

TOOL, DIE, AND MOLD MAKING

Although some tool, die, and mold shops exist, they are very small, and the metalworking and plastics industries complain about the inadequacy of available services. In fact, many manufacturers must import these items. Others feel it necessary to install costly machinery for making their own dies and molds. One of the reasons for this scarcity is the lack of sufficient skilled personnel.

LAUNDRY AND DRY CLEANING

All larger towns have laundries and dry cleaning establishments. Their number is estimated to be over 500, of which almost half are in Caracas. Most are small, and some efficient larger establishments with numerous pick-up points and home delivery are obtaining a constantly increasing share of the market. Lav-O-Mat, La Primera, and Nuria are some of the larger companies. Coyne Lavanderia is the only industrial laundry with linen rental service to hotels, restaurants, and hospitals. Diaper services are becoming more popular. Coin-operated laundries, of which several have been established in recent years, have not yet found a wide acceptance, mainly because so many households have maids who do the laundry.

The companies use mostly U. S.-made equipment, but use locally produced detergents, bleaches, starches, hangers, film bags, and similar supplies.

Economic Data and Foreign Trade Statistics

Table 1.—Final value of Venezuelan industrial output,
1965–68

(In millions of bolivares ¹)

	1965	1966	1967	1968
Durable Goods				
Furniture	354	383	407	420
Lumber	171	162	170	219
Machinery (construction, assembly and repair thereof)	70	82	97	111
Metal products (basic)	398	389	489	583
Metal products (other)	564	552	613	644
Non-metallic mineral products	442	443	486	502
Rubber products	232	218	236	264
Vehicles (construction, assembly and repair thereof)	812	892	898	1,039
Total	3,043	3,121	3,396	3,782
Non-Durable Goods				
Beverages	678	712	752	799
Chemicals	844	843	929	1,026
Clothing	321	332	344	342
Foods	2,006	2,047	2,174	2,221
Graphic arts products	281	311	391	440
Leathers and skins	107	121	114	108
Paper and paperboard	395	409	436	484
Petroleum derivatives	3,461	3,523	3,534	3,536
Textiles	838	846	883	942
Tobacco	386	385	388	413
Total	9,317	9,529	9,945	10,311
Other	263	287	321	333
Grand total	12,623	12,937	13,662	14,426

Source: Banco Central de Venezuela, *Informe Económico Correspondiente al Año 1968*, p. A-95.

¹ One bolivar = approximately \$0.22, for most purposes, at the 1965–68 exchange rate.

Table 2.—Venezuelan manufacturing sector gross fixed investment and existing capital, 1966–68

(In millions of bolivares ¹ at 1957 prices)

	Annual Gross Fixed Investment			Existing Capital (1968)	
	1966	1967	1968	Value	% of Manufacturing Capital
Beverages	55	53	55	535	8.3
Chemicals	49	42	49	360	5.6
Clothing	42	23	29	247	3.8
Foods	104	103	102	1,081	16.8
Graphic arts	80	45	63	440	6.8
Leathers and skins	19	17	18	135	2.1
Metal products, machinery and transport equipment	243	244	302	1,869	29.0
Non-metallic mineral products	62	63	64	539	8.4
Paper and paperboard	8	8	8	49	0.8
Rubber and derivatives	6	5	6	49	0.8
Textiles	41	46	47	587	9.1
Tobacco	3	3	3	31	0.5
Wood and furniture	69	62	68	427	6.6
Other	12	14	14	85	1.3
Total	793	728	828	6,434	100.0

Source: Banco Central de Venezuela, *Informe Economico Correspondiente al Ano 1968*, p. A-105.

¹ One bolivar = approximately \$0.30 at the 1957 rate of exchange or approximately \$0.22, for most purposes, at the 1966–68 rate of exchange.

Table 3.—Venezuela: imports of selected principal commodities, 1965–68

(In thousands of bolivares)

Commodity	1965	1966	1967	1968
Milk, whole or partly skimmed, dried	123,408	50,801	68,324	65,847
Wheat	167,195	165,261	216,868	217,493
Malt	26,365	26,735	29,669	34,178
Synthetic rubber and rubber substitutes	23,202	23,492	23,222	26,827
Meechanical and chemical pulp of wood, straw, fibers, and rags	51,788	50,177	47,923	56,750
Artificial and synthetic fibers suitable for spinning	12,063	8,759	21,756	15,232
Organic chemical products	83,372	88,691	121,610	146,417
Coal tar dyes	15,468	13,629	22,466	22,818
Artificial thermoplastic resins	14,390	65,078	71,526	76,782
Newsprint	27,019	34,870	34,858	39,712
Paper, paperboard and cardboard, coated, impregnated, vulcanized, etc.	6,466	10,109	19,081	25,022
Fabric of artificial or synthetic and man made textile fibers, including glass fiber	46,289	45,296	38,048	46,627
Iron or steel joists, girders, angles, shapes, sections, bars and concrete reinforcement rounds, including tube rounds and squares	49,994	22,603	31,418	30,025
Universal plates and plates and sheets, iron or steel, plain, corrugated, grooved, stamped, perforated, etc., not coated	81,450	76,019	118,741	114,672
Tinplate	68,416	48,170	66,383	63,290
Tubes, pipes and fittings, iron or steel (other than cast iron) coated or not, including drain pipes of galvanized sheet	102,425	50,653	32,967	55,393

Table 3.—Continued

Commodity	1965	1966	1967	1968
Tubes, pipes and fittings of cast iron	17,303	37,337	30,009	25,716
Bars, rods and strip of copper or copper alloys, other than gold, silver or platinum plated	18,349	31,383	25,959	27,073
Hand tools for craftsmen	32,251	31,742	31,985	36,729
Power generating machinery, other than electric	100,544	94,957	125,391	138,762
Agricultural machinery and equipment	48,528	43,463	30,810	28,699
Tractors, except steam	115,510	86,691	97,451	136,381
Office machines	57,062	72,856	77,479	94,688
Metal working machinery	66,190	71,640	70,886	95,113
Pumps for liquids, and parts	52,208	51,344	40,098	40,468
Conveying, hoisting, excavating, road construction, and mining machines and parts	178,790	140,806	175,697	220,144
Textile machinery and parts	79,838	35,939	49,451	51,119
Air conditioning and purifying equipment	30,201	36,083	33,985	49,953
Air pumps (including tire pumps) suction pumps and air or gas compressors with built in motors, or without motors	18,258	24,074	20,537	24,603
Machinery for separating, screening, washing, crushing, pulverizing or mixing earth, stones and other solid substances	10,042	13,792	16,270	24,463
Taps, cocks, valves, and similar appliances of base metals for regulating the flow of liquids in pipes (other than cocks for sanitary articles)	37,762	34,435	35,373	33,275
Generators, alternators, motors and converters, transformers and switchgear	114,804	125,549	128,163	139,183
Radio telegraphic, radio-telephonic and television transmission and receiver apparatus, with or without cabinet (including radio broadcast receivers, record players, sound recorder combinations and television cameras)	106,628	77,166	87,647	83,068
Condensers, filters, and other parts for radiotelegraphic and radiotelephonic apparatus	13,192	15,425	18,706	19,692
Condensers, filters, and other parts for television apparatus	7,704	12,505	22,860	20,362
Telephone and telegraph apparatus (except radio apparatus) and parts	29,669	26,708	37,453	61,162
Electrical articles and accessories for motor vehicles, aircraft, boats, cycles, and internal combustion engines	22,550	25,353	26,323	30,219
Electrical household machines for washing, drying, or ironing clothes	16,846	22,748	20,784	31,868
Electrical household appliances (mixers, vacuum cleaners, floor polishers, etc.)	19,891	24,891	25,212	32,205
Passenger cars, other than buses or motorcycles, complete (assembled or unassembled)	332,214	291,725	340,860	395,953
Trucks and vans (pick-ups and panels) tank and refrigerated trucks and other motor vehicles for the transport of goods	165,780	130,831	129,498	175,528
Bodies and chassis, without engines; frames and other parts and accessories for road motor vehicles	146,101	137,861	149,927	166,749
Heavier than air aircraft, complete, (assembled or unassembled), and parts	36,880	60,797	79,852	106,473
Measuring, checking, and scientific instruments and parts	45,829	53,981	52,825	54,227
Mechanical household refrigerators and freezers, complete, self contained units, and parts	30,173	17,106	21,280	23,666

Source: Ministerio de Fomento, Direccion General de Estadistica y Censos Nacionales, *Boletin de Comercio Exterior*, Venezuela, January-December 1965-68, Caracas, 1966-69.

Note: One bolivar = \$0.2222 for imports in general; exchange subsidy creates effective rate of 1 bolivar = \$0.2985 for imports of dried milk and wheat.

Table 4.—Principal U.S. exports to Venezuela, 1966–69

(In millions of dollars)

	1966	1967	1968	1969
Wheat, including spelt and meslin, unmilled	28.0	40.5	38.5	39.0
Organic chemicals	11.0	12.0	15.5	12.7
Iron and steel	14.0	13.9	16.3	27.8
Engines—internal combustion, except aircraft	10.9	11.4	12.8	13.5
Tractors, engines, and parts, except road and industrial	8.7	9.2	10.9	12.5
Construction and mining machinery, n.e.c., and parts	12.9	15.1	17.5	17.1
Heating and cooling machinery and equipment and parts	12.5	12.2	17.3	24.6
Pumps, compressors, centrifuges, etc., and parts	17.8	18.4	22.2	30.2
Mechanical handling equipment and parts	14.8	13.0	14.3	16.3
Electric power machinery and parts	14.3	8.7	6.0	7.0
Electrical apparatus for making, breaking, etc., circuits, and parts	5.6	5.2	6.3	9.4
Electric household equipment and appliances and parts	13.8	10.6	13.4	11.9
Passenger cars, trucks, etc.	42.7	34.4	45.4	46.5
Motor vehicle and tractor parts and accessories, n.e.c.	29.2	31.6	34.1	31.6
Aircraft	12.8	14.1	20.9	21.2

Source: U.S. Department of Commerce, Bureau of the Census, *Report FT 455, Annual 1966–69, Washington, D.C.*

Table 5.—Venezuelan production of dairy products, 1965–67

Product	1965	1966	1967
Pasteurized milk (1,000 liters)	163,847	186,609	206,999
Chocolate milk (1,000 liters)	3,339	3,812	4,999
Acidized milk (metric tons)	1,253	1,519	1,330
Powdered milk (metric tons)	30,170	32,855	34,439
Butter (metric tons)	4,552	3,879	4,317
Ice cream (metric tons)	20,805	20,091	20,689
Cheese (metric tons)	N.A.	N.A.	6,836

Source: Ministry of Development, Caracas, Venezuela.
N.A. = Not available.

Table 6.—Production of food specialties in Venezuela, 1965–67

(In metric tons)

Product	No. of Firms	Production		
		1965	1966	1967
Fruit syrups	4	203	204	200
Fruit in syrup	8	1,351	896	1,703
Fruit juices	9	29,980	24,474	26,627
Soups	7	2,249	2,267	3,000
Spices	5	1,186	1,299	1,254
Sauces, mayonnaise	7	7,836	7,692	11,516
Vinegar (1,000 liters)	4	4,939	4,597	5,467

Source: Ministry of Development, Caracas, Venezuela.

Table 7.—Production of confectionery products in Venezuela, 1965–67

(In metric tons)

Product	Firms	1965	1966	1967
Chocolates	7	5,356	5,066	5,276
Chewing gums	6	3,517	3,448	5,184
Sweets, candy	32	9,358	8,961	9,667
Jams, jellies	6	1,689	1,897	1,910
Party snacks	11	392	437	441

Source: Ministry of Development, Caracas, Venezuela.

Table 8.—Venezuela: equipment in primary textile mills, 1965–67

	1965	1966	1967
Spindles for:			
Cotton	264,178	264,477	274,108
Waste	5,956	5,956	5,754
Synthetic	21,940	22,186	21,940
Wool	—	6,000	6,000
Total	292,074	298,619	307,802
Looms for:			
Cotton	4,519	4,437	4,570
Synthetic	1,191	1,189	1,189
Wool	213	212	220
Total	5,923	5,838	5,979

Source: American Embassy, Caracas

Table 9.—Average hourly labor cost in selected Latin American countries—salaries plus fringe benefits per hour

Argentina	0.51
Brazil	0.25
Colombia	0.51
Mexico	0.70
Peru	0.85
Paraguay	0.50
Venezuela	1.05

Table 10.—Venezuela: production of cotton textiles, 1966–67

	1966	1967
Cotton yarns (metric tons)	17,612	18,363
Unbleached fabrics (1,000 meters)	9,538	11,398
Bleached fabrics (1,000 meters)	2,483	2,766
Drills (1,000 meters)	2,603	2,257
Canvas (1,000 meters)	1,889	2,292
Sheeting (1,000 meters)	6,893	6,888
Other (1,000 meters)	48,791	42,403
Cotton knit fabrics (metric tons)	865	701
Cotton hose (1,000 pairs)	383	439
Cotton socks (1,000 pairs)	239	591
String (metric tons)	913	1,060
Bedspreads (1,000 units)	308	362
Towels (1,000 units)	3,203	3,573

Source: Ministry of Development, Caracas, Venezuela.

Table 11.—Venezuela: daily production capacities at IVP Moron plant

Chemical Product	Amount
Hydrogen	9,000 cubic meters
Chlorine	34 metric tons
Caustic soda	30 " "
Hydrochloric acid, 33%	21 " "
Sodium hypochloride	16 " "
Sulphuric acid, 98%	200 " "
Phosphoric acid at 50%	100 " "
Simple superphosphate	120 " "
Triple superphosphate	300 " "
Synthetic ammonia	100 " "
Nitric acid at 53%	185 " "
Nitric acid at 98%	30 " "
Ammonium nitrate calcined, 21%	150 " "
Ammonium nitrate prilled, 35%	10 " "
Ammonia sulphate	240 " "
Urea, 46%	50 " "

Source: Ministry of Development, Caracas, Venezuela.

Table 12.—Venezuela: petroleum and petroleum products exported in 1967

Crude	\$2,026,484,612
Natural gasoline	1,889,107
Gasoline	74,989,870
Solvents	23,512,958
Kerosene	80,712,143
Jet fuel	12,607,347
Gas oil, diesel oil	626,281,947
Lubricating oils	12,213,434
Asphalt	11,478,942
Others	15,886,187

Source: Ministry of Development, Caracas, Venezuela.

Table 13.—Venezuelan production of paints, 1965–67

(In metric tons)

	1965	1966	1967
Paints:			
in oil	8,285	7,737	9,262
in paste	12,390	9,742	12,301
in powder	3,443	2,919	3,211
Enamels	3,984	3,847	4,287
Lacquers, varnishes	3,354	3,308	3,585
Solvents	6,355	6,568	6,249

Source: Ministry of Development, Caracas, Venezuela.

Table 14.—Venezuelan production of lumber, 1965–67

(In cubic meters)

	1965	1966	1967
Fine woods	60,898	59,623	56,358
Hardwoods	71,845	74,696	90,926
Softwoods	305,313	317,862	300,173
Sawn lumber	214,964	204,570	200,590
Plywood	15,169	13,895	19,624

Source: Ministry of Development, Caracas, Venezuela.

Table 15.—Venezuelan paper and board production, 1965–66

(In metric tons)

	1965	1966
Bond	12,342	15,723
Toilet	13,736	16,159
Napkins	3,846	3,772
Light wrapping	6,217	6,159
Kraft	48,270	58,979
Linerboard	30,028	46,000
Medium board	15,830	
Grey board	7,260	6,655
White board	17,438	19,562
Total	154,963	173,009

Source: Association of Paper, Carton, and Pulp Manufacturers (APROPACA).

Table 16.—Venezuelan production of converted paper products, 1965–67

(In metric tons)

	1965	1966	1967
Bags	18,242	16,702	19,064
Sacks	24,450	23,662	24,721
Labels	582	729	455
Envelopes	1,136	1,131	1,073
Cups	4,181	4,165	4,162
Boxes	54,266	59,125	62,672
Plates	669	533	445

Source: Ministry of Development, Caracas, Venezuela.

Table 17.—Venezuelan production of tires and innertubes, 1965–67

(In units)

	1965	1966	1967
Tires:			
Automobiles	832,881	896,280	844,920
Trucks, tractors, etc.	389,604	430,442	398,986
Innertubes:			
Automobiles	461,444	484,654	503,639
Trucks, tractors, etc.	276,825	307,262	279,773

Source: Ministry of Development, Caracas, Venezuela.

Table 18.—Venezuelan production of skins and leather, 1965–67

	1965	1966	1967
Skins (1,000 sq. ft.)	27,334	28,605	31,438
Liners (1,000 sq. ft.)	2,915	2,695	2,113
Uppers (1,000 sq. ft.)	43	111	143
Soles (metric tons)	5,511	8,544	7,518

Source: Ministry of Development, Caracas, Venezuela.

Table 19.—Venezuela: steel production by SIDOR, 1965–68

(In metric tons)

	1965	1966	1967	1968
Pig iron	315,923	351,385	422,202	613,860
Steel	537,427	419,821	564,056	747,489
Semi-finished slabs, blooms, and billets	430,053	370,085	500,684	635,585
Slabs	143,113	163,606	278,012	399,257
Pipe	96,126	75,904	97,620	107,208
Structurals	38,569	18,955	37,338	73,237
Reinforced rods (including wire rod)	67,441	107,110	88,705	115,728
Barbed wire	8,421	7,889	6,509	8,307
Galvanized wire	17,687	15,152	14,541	23,904

Source: Siderurgica del Orinoco, C.A. (Sidor).

Table 20.—Production of metal furniture, 1965–67

(In units)

	1965	1966	1967
Filing cabinets	8,317	10,076	12,036
Bookcases	3,834	2,879	4,387
Easy chairs	10,629	7,661	7,684
Beds, cots, cribs	97,723	104,227	98,056
Shelves	10,297	13,647	12,615
Desks	12,167	10,179	20,527
Lockers	11,244	11,304	14,568
Tables	18,516	21,251	20,006
Chairs, folding chairs	111,029	240,765	186,259
Others	428,389	252,865	243,830

Source: Ministry of Development, Caracas, Venezuela.

Table 21.—Venezuelan assembly of motor vehicles, 1965–68

(In units)

	1965	1966	1967	1968
Automobiles	35,941	39,626	38,619	48,570
Station Wagons	5,350	5,142	3,617	
Trucks	7,691	7,789	5,664	
Pickups	7,663	5,002	5,654	14,047
Total	56,695	57,559	53,554	62,617

Source: Ministry of Development, Caracas, Venezuela.

Table 22.—Production of electronic equipment, 1966 and 1968

(In units)

	1966	1968 (estimated)
TV receivers	47,573	72,000
Radios and radio-phonographs	50,406	75,000
Amplifiers	1,965	2,500
Automobile radios	10,718	32,000
TV-record player combinations	425	500
Console-type record players	973	1,200

Source: Chamber of Manufacturers of Appliances, CAFADAE.

Table 23.—Venezuela: production capacity of electronics industry

(In units per year)

TV receivers	190,000
Radios and radio-phonographs	100,000
Amplifiers	10,000
Automobile radios	40,000
Record players	23,000
TV picture tubes	100,000
Transformers ¹	1,300,000
Potentiometers	400,000
Loudspeakers	35,000
Tuners	62,000

Source: Chamber of Manufactures of Appliances, CAFADAE.

¹ Electronic applications only.

Number of Venezuelan Producers of Manufactured Goods, By Type and Location

Code No.	Type of Manufactured Goods	Caracas, Metropolitan	Federal District	State of Anzoategui	State of Apure	State of Aragua	State of Barinas	State of Bolívar	State of Carabobo
20	Foods, except beverages	430	595	50	5	91	3	82	106
21	Beverages	22	28	8	1	9	1	8	18
22	Tobacco products	10	3	0	0	4	0	0	2
23	Textiles	130	96	2	0	22	1	1	11
24	Textile products, shoes	772	2,277	31	0	5	0	58	92
25	Wood, cork and products, except furniture	61	123	5	0	5	6	15	18
26	Furniture	212	763	24	0	9	1	33	39
27	Paper and products	84	57	3	0	10	0	0	7
28	Printing, publishing, and related	176	418	8	0	4	0	8	28
29	Leather and products, except shoes	48	82	1	0	5	0	3	8
30	Rubber products	49	105	0	0	0	0	5	7
31	Chemicals and products	147	154	4	0	21	0	3	26
32	Products of petroleum and coal	7	1	3	0	1	0	0	3
33	Other non-metallic mineral products	78	112	14	1	41	2	29	33
34	Primary base metal products	10	11	2	0	5	0	1	2
35	Other metal products, except machinery	158	421	5	0	25	0	19	57
36	Machinery, non-electrical	37	82	4	0	3	2	8	17
37	Machinery (accessories, etc.)	72	608	0	0	13	9	19	12
38	Transportation equipment	67	919	0	0	16	0	26	71
39	Miscellaneous	282	339	3	0	17	0	23	13

Code No.	Type of Manufactured Goods	State of Cojedes	State of Falcon	State of Guarico	State of Lara	State of Merida	State of Miranda	State of Monagas	State of Nueva Esparta
20	Foods, except beverages	8	37	22	131	44	150	13	8
21	Beverages	1	8	2	19	8	30	4	1
22	Tobacco products	0	0	0	8	0	3	0	0
23	Textiles	0	1	1	12	1	76	0	0
24	Textile products, shoes	0	14	0	42	10	105	0	0
25	Wood, cork and products, except furniture	1	3	1	18	7	51	0	0
26	Furniture	0	4	2	42	10	179	4	0
27	Paper and products	0	0	0	3	0	29	0	0
28	Printing, publishing, and related	0	1	1	31	5	41	1	2
29	Leather and products, except shoes	0	0	0	0	0	9	0	0
30	Rubber products	0	1	0	1	1	14	0	0
31	Chemicals and products	0	0	0	13	7	122	4	0
32	Products of petroleum and coal	0	0	0	0	0	6	0	0
33	Other non-metallic mineral products	0	4	0	37	15	73	6	7
34	Primary base metal products	0	0	0	2	0	4	0	0
35	Other metal products, except machinery	2	4	0	41	8	120	2	0
36	Machinery, non-electrical	0	0	0	8	0	09	2	0
37	Machinery (accessories, etc.)	0	0	1	6	0	30	0	0
38	Transportation equipment	0	0	0	12	0	38	0	1
39	Miscellaneous	0	1	0	10	6	103	0	2

Code No.	Type of Manufactured Goods	State of Portuguesa	State of Sucre	State of Tachira	State of Trujillo	State of Yaracuy	State of Zulia	Territory of Amazonas	Territory of Delta Amacuro
20	Foods, except beverages	6	87	108	31	27	148	1	5
21	Beverages	0	20	8	7	2	20	1	0
22	Tobacco products	0	9	11	0	3	1	0	0
23	Textiles	0	2	8	0	1	1	0	0
24	Textile products, shoes	0	25	52	7	5	63	0	0
25	Wood, cork and products, except furniture	5	7	19	1	5	35	2	0
26	Furniture	2	9	8	9	5	54	0	0
27	Paper and products	0	1	0	0	0	9	0	0
28	Printing, publishing, and related	0	6	28	2	1	23	0	0
29	Leather and products, except shoes	0	1	16	1	2	8	0	0
30	Rubber products	0	1	3	0	0	8	0	0
31	Chemicals and products	1	6	11	2	2	30	0	0
32	Products of petroleum and coal	0	0	0	0	0	0	0	0
33	Other non-metallic mineral products	2	25	45	15	8	36	0	0
34	Primary base metal products	0	0	0	1	0	4	0	0
35	Other metal products, except machinery	1	7	25	0	1	36	0	0
36	Machinery, non-electrical	1	4	9	2	1	7	0	0
37	Machinery (accessories, etc.)	0	0	4	0	0	9	0	0
38	Transportation equipment	1	6	20	0	2	1	1	0
39	Miscellaneous	0	2	15	0	0	15	0	0

Source: This listing is based on Ministry of Development data through July 30, 1966 (through December 31, 1963, for the Federal District). Included in the data are most firms with a capitalization of approximately \$100,000 or more. The listing should be taken as a rough index, only, of the current distribution of industry. No attempt has been made to correlate the information here with the text of this publication.

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